Ontario

Ontario's Living Legacy

# Algoma Headwaters Signature Site

## Background Information

November 2002

# Algoma Headwaters Signature Site

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November 2002

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# ALGOMA HEADWATERS SIGNATURE SITE

## SUMMARY OF BACKGROUND INFORMATION

The Algoma Headwaters Signature Site is a 60,000 hectare protected area encompassing three provincial parks and one conservation reserve. These components are: Algoma Headwaters Natural Environment Class Provincial Park and two waterway class provincial parks (the Goulais River and Aubinadong-Nushatogaini Rivers), as well as the Ranger North Conservation Reserve).

The Algoma Headwaters Signature Site is located within the greater Algoma area, approximately 90 kilometres northeast of Sault Ste. Marie, and 50 kilometres south of Chapleau. This signature site was identified as one of nine featured areas within *Ontario's Living Legacy – Land Use Strategy* (1999). These special areas all contain significant natural and cultural features with high-quality recreational and backcountry opportunities.

The scenic Algoma Headwaters Signature Site consists of diverse landscapes of rolling hills, forests and wetlands, with a network of interconnecting waterways. The area exhibits a variety of significant natural, cultural and recreational features, including a diversity of plant and animal species, as well as old growth red and white pine forests. The Algoma forests are renowned for their beautiful fall foliage, and are often a destination for sightseeing and wildlife viewing. The signature site region is used by the forestry and mining sectors, as well as by hunters, fishermen and recreationists.

A signature site strategy is being prepared for Algoma Headwaters, which will guide the protection and management of resources, visitor use and overall development within the site. The strategy will set the direction for plan implementation, including protection, zoning, management and operations. It is a dynamic planning tool, looking forward over a 20-year period. There are currently no public services offered within the signature site.

The Algoma Headwaters Signature Site contains some of the oldest and largest stands of white pine in Ontario, some of which are up to 350 years old and 15 stories high. These stands are particularly evident in the vicinity of Megisan, Gord, Prairie Grass and Dyson Lakes. The protection of old growth pine is also the primary reason for the establishment of the Ranger North Conservation Reserve. The signature site straddles the transition zone where the boreal forest to the north overlaps with the Great Lakes – St. Lawrence Forest to the south. The Life Science Inventory of the Signature Site (North-South Environmental Inc., 2001) documents the presence of 24 vegetation communities and approximately 400 plant species.

The waterways within the protected area vary from small creeks to large lakes and whitewater rivers. The Goulais River Provincial Park is a 67 kilometre section of scenic waterway, while the Aubinadong - Nushatogaini Rivers Provincial Park encompasses an 85 kilometre network of lakes and rivers. The signature site is so named since it encompasses the headwaters of several significant rivers within the administrative district of Algoma, notably the Batchawana, Goulais, Garden, Montreal and Mississagi rivers.

Cultural heritage sites are found within the signature site and surrounding Crown land. Heritage features associated with the site include original portages and campsites along ancient travel routes. These are important places and sites that supported pre-contact activities. More recent historic cultural features include evidence of logging and mining.

Aboriginal and treaty rights within the Algoma Headwaters Signature Site will continue to be respected. The entire signature site is located within the Robinson-Huron Treaty Area. Traditional natural resource activities by Status Indians with treaty rights for subsistence and ceremonial purposes will continue within the signature site.

From 1992 to1996, the Ministry of Natural Resources carried out an individual environmental assessment (EA), which examined potential forest management impacts on commercial tourism in the vicinity of Megisan Lake. A significant portion (approximately 40 per cent) of the 'area of the undertaking' that was the subject of the Megisan Lake Area Environmental Assessment has been incorporated and protected within the Algoma Headwaters Signature Site. Because main issues of this EA have been resolved, the Ministry of the Environment (MOE) has recently approved a declaration order which lifted the requirements of this individual EA. The protected status of the signature site will now proceed, and timber harvesting will continue on the remainder of the area outside the Algoma Headwaters Signature Site.

The signature site strategy planning process will incorporate full public consultation and will be developed by completing the following stages: preparation and release of the terms of reference, background information, management options, preliminary management strategy and approved signature site strategy.

ALGOMA HEADWATERS SIGNATURE SITE

# Région caractéristique des eaux d'amont d'Algoma :

## Résumé du document d'information

La région caractéristique des eaux d'amont d'Algoma est un territoire protégé de 60 000 hectares qui englobe trois parcs provinciaux et une réserve de conservation. Ces composantes sont : le parc provincial Algoma Headwaters (catégorie parc naturel) et deux parcs provinciaux de catégorie parc aquatique (Goulais River et Aubinadong-Nushatogami Rivers), ainsi que la réserve de conservation Ranger North.

La région caractéristique des eaux d'amont d'Algoma se situe dans le secteur d'Algoma, soit à environ 90 kilomètres au nord-est de Sault Ste Marie et à 50 kilomètres au sud de Chapleau. Il s'agit d'une des neuf régions caractéristiques désignées dans le cadre de la stratégie d'utilisation des terres du *Patrimoine vital de l'Ontario* (1999). Ces régions particulières abritent des caractéristiques naturelles et culturelles importantes présentant d'excellentes possibilités de loisirs et d'activités en arrière-pays et, par conséquent, méritent un degré avancé de planification, d'exploitation et de promotion.

La région caractéristique des eaux d'amont d'Algoma présente un paysage pittoresque et varié de collines, de forêts et de marécages avec un réseau de voies d'eau reliées les unes aux autres. La région contient une variété d'importantes caractéristiques naturelles, culturelles et récréatives, parmi lesquelles une grande diversité de plantes et d'espèces fauniques, des forêts anciennes de pin blanc et de pin rouge, dans un cadre primitif. Les forêts de l'Algoma sont renommées pour leurs magnifiques couleurs automnales et sont souvent la destination d'amateurs de paysages et d'observation de la faune. La région caractéristique intéresse à la fois les secteurs forestier et minier, ainsi que les chasseurs, les pêcheurs et les amateurs de nature.

La stratégie en cours d'élaboration pour la région caractéristique des eaux d'amont d'Algoma servira de guide aux mesures de protection et d'exploitation des ressources, aux activités offertes aux visiteurs et à tout aménagement du terrain. La stratégie apportera aussi l'orientation de la mise en œuvre du plan, y compris la protection, le zonage et la gestion des opérations. Il s'agit d'un outil de planification dynamique établi sur un calendrier de vingt ans. Actuellement aucun service public n'est offert à l'intérieur de la région caractéristique.

La région caractéristique des eaux d'amont d'Algoma contient quelques uns des peuplements les plus anciens et les plus importants de pin blanc en Ontario, dont certains ont près de 350 ans et atteignent une hauteur de quinze étages. On note en particulier les peuplements des alentours des lacs Megisan, Gord, Prairie Grass et Dyson. Protéger les pins blancs anciens est également l'un des motifs principaux de l'établissement de la réserve de conservation Ranger North. La région caractéristique chevauche la zone de transition dans laquelle la forêt boréale au nord, se fond à la forêt des Grands Lacs et du Saint-Laurent, au sud. L'inventaire des sciences de la terre de la région caractéristique (*North-South Environmental Inc., 2001*) fait état de la présence de 24 communautés végétales soit environ 400 espèces de plantes.

Les étendues et cours d'eau du territoire protégé varient de petits ruisseaux à des lacs importants, avec des torrents. Le parc provincial Goulais River suit un segment pittoresque de 67 kilomètres de la rivière, tandis que le parc provincial des rivières Aubinadong-Nushatogami est un réseau de 85 kilomètres de lacs et de rivières. La région caractéristique doit son nom au fait qu'elle englobe plusieurs rivières importantes du district administratif d'Algoma dont notamment la Batchawana, la Goulais, la Garden, la Montréal et la Mississagi.

On trouve des lieux historiques à l'intérieur du périmètre de la région caractéristique et des terres de la Couronne environnantes. Ce sont notamment des portages et des camps le long d'anciens sentiers. Il s'agit de lieux sacrés et d'emplacements d'activités autochtones datant d'avant l'arrivée des Européens. Plus récemment, des activités telles que la coupe du bois et la mine ont produit quelques lieux historiques.

On continuera de respecter les droits autochtones et les droits issus de traités dans la région caractéristique des eaux d'amont d'Algoma. La région entière se situe à l'intérieur de la zone visée par le traité Robinson-Huron. Les activités traditionnelles relatives aux ressources pratiquées par les Indiens de plein droit, aux fins de subsistance et de cérémonie pourront se poursuivre dans la région caractéristique.

Entre 1992 et 1996, le ministère des Richesses naturelles s'est livré à une évaluation environnementale qui visait à examiner les effets de l'exploitation forestière sur le tourisme commercial dans les alentours du lac Megisan. Une portion importante (environ 40 pour 100) du territoire considéré dans l'évaluation environnementale de la région du lac Megisan a été incorporée et est maintenant protégée au sein de la région caractéristique des eaux d'amont d'Algoma. Étant donné que les principales questions de l'évaluation environnementale ont été résolues, le ministère de l'Environnement (ME) a récemment approuvé une ordonnance de déclaration qui a mis fin aux exigences de l'évaluation environnementale. La protection de la région caractéristique sera maintenant reconnue et la récolte de bois d'œuvre se poursuivra sur le reste du territoire situé en dehors de la région caractéristique des eaux d'amont d'Algoma.

Le processus de planification de la région caractéristique comprendra une consultation publique dans les règles et se déroulera par les étapes suivantes : rédaction et publication du mandat, des documents d'information, des options de gestion, de la stratégie préliminaire de gestion et de la stratégie approuvée de la région caractéristique.

## ALGOMA HEADWATERS SIGNATURE SITE

## VISION STATEMENT

"THE ALGOMA HEADWATERS SIGNATURE SITE WILL PROVIDE LONG-TERM PROTECTION FOR THE AREA'S NATURAL AND CULTURAL LANDSCAPES, WHILE PROVIDING PRESENT AND FUTURE GENERATIONS WITH HIGH-QUALITY, YEAR-ROUND RECREATIONAL OPPORTUNITIES. IN A REMOTE YET ACCESSIBLE SETTING, THE SIGNATURE SITE PROVIDES THE OPPORTUNITY TO EXPERIENCE OLD GROWTH FORESTS AND SCENIC WATERWAYS, AS WELL AS TO APPRECIATE ABORIGINAL HERITAGE VALUES. THE SITE IS DEDICATED IN PERPETUITY TO THE PEOPLE OF ONTARIO AND OTHERS FOR THEIR ENJOYMENT, EDUCATION AND BENEFIT."

OLD GROWTH WHITE PINE SITUATED WEST OF GOULD LAKE



## 1.0 INTRODUCTION

The Algoma Headwaters Signature Site is a 60,000 hectare protected area encompassing three provincial parks and one conservation reserve. These components are: Algoma Headwaters Provincial Park (Natural Environment Class) and two Waterway Class Provincial Parks (the Goulais River and Aubinadong-Nushatogaimi Rivers), as well as the Ranger North Conservation Reserve (Figure 2).

The Algoma Headwaters Signature Site is located within the greater Algoma area, approximately 90 kilometres northeast of Sault Ste. Marie and 50 kilometres south of Chapleau (Figure 1). This was identified as one of nine 'Featured Areas' within *Ontario's Living Legacy - Land Use Strategy* (1999). Signature sites have significant resource, tourism and recreational potential that merit an increased level of planning, management and promotion. These special areas all contain significant natural and cultural features with high-quality recreational and backcountry opportunities.

The scenic Algoma Headwaters Signature Site is composed of diverse landscapes of rolling hills, forests and wetlands, with a network of interconnecting waterways. The area exhibits a variety of significant natural, cultural and recreational features. The Algoma forests are renowned for their beautiful fall foliage, and are often a destination for sightseeing and wildlife viewing. The Algoma *region* is used by the forestry and mining sectors, as well as by hunters, anglers and recreationists.

While some areas within the signature site are accessible by road, it is predominantly remote and undeveloped. In general, access becomes more limited farther north, and the northern sector is accessible only by air or canoe.

There are currently no public services offered by Ontario Parks within the signature site.

The Algoma Headwaters Signature Site is characterized by surficial glacial deposits overlying Precambrian rock, and is located entirely within the Western Abitibi sub-province of the Superior structural province of the Canadian Shield. The surficial deposits are made up of ground moraine which was deposited by glacial ice of the late Wisconsinan age, which retreated from the area about 10,000 years ago. The most prominent features include segments of the regionally significant Cartier moraine, provincially significant deltaic and valley 'train' deposits of the west Aubinadong River, and a provincially significant ice contact delta on the Goulais River.

The Algoma Headwaters Signature Site contains some of the largest and oldest stands of white and red pine in Ontario, some of which are up to 350 years old and 15 stories high. These stands are particularly evident in the vicinity of Megisan, Gord, Prairie Grass and Dyson Lakes. The protection of old growth pine is also the primary reason for the establishment of the Ranger North Conservation Reserve.

The Life Science Inventory of the Signature Site (North-South Environmental Inc., 2001) documents 24 vegetation communities and approximately 400 plant species that occur within the site. Bog and fen wetlands are common, and

support seasonal blooms of cranberries *(vaccinium)*, orchids *(orchidacea)* and Labrador tea *(rhododendron)*.

The signature site straddles the transition zone where the Boreal Forest to the north overlaps with the Great Lakes - St. Lawrence Forest to the south. This means that forest cover generally changes in a northerly direction from predominantly deciduous to mainly coniferous. The Boreal Forest types which dominate the signature site include jack pine *(Pinus banksiana)*, black spruce *(Picea mariana)* and white birch *(Betula papyrifera)*, while the deciduous forests are comprised of sugar maple *(Acer saccharum)* and yellow birch *(Betula alleghaniensis)*. Sugar maple stands are most notable on hilltops in the fall when the colours shift to seasonal red and orange. The Great Lakes - St. Lawrence Forest types account for 20 per cent of the forests in the signature site.

The Algoma Headwaters Signature Site remains heavily forested and relatively undisturbed, with minimal development. Current land use activities within the signature site and the surrounding area are mainly related to recreation and tourism. These activities include backcountry camping, fishing, hunting, canoeing, and general recreation, with the area offering both commercial fly-in outpost facilities and opportunities for self-outfitted campers.

Timber harvesting is the primary industry in the region, but is not permitted within the signature site. Trapping, which occurs throughout the signature site, will be permitted to continue, except in those areas designated as nature reserve zones. Although mineral prospecting occurs throughout the area, it is no longer permitted within the signature site.

The waterways in the protected area vary from small creeks to whitewater rivers to small and large lakes. The Goulais River Provincial Park is a 67-kilometre section of scenic waterway, while the Aubinadong - Nushatogatmi Rivers Provincial Park encompasses an 85-kilometre loop of lakes and rivers. Both waterways offer challenging opportunities for canoeing. However, both routes are most navigable in spring, when water levels are highest. The Algoma Headwaters Signature Site is so named since it encompasses the headwaters of several significant rivers within the Administrative District of Algoma, notably the Batchawana, Goulais, Garden, Montreal and Mississagi Rivers.

There are approximately 175 lakes and over 200 rivers and streams within the signature site. Some of these waterways have ideal conditions for lake trout *(Salvelinus namaycush)* and brook trout *(Salvelinus fontinalis)* fisheries, while others support warmer water species of walleye *(Stizostedion vitreum)* and northern pike *(Esox lucius)*. Thus, the area is a popular fishing destination, with fishing opportunities accessible by road, snowmobile and floatplane.

Wildlife is plentiful in the signature site, with the Life Science Inventory for Algoma Headwaters Signature Site recording 43 species of mammals, 197 species of birds and 28 species of reptiles and amphibians. The signature site area is home to a number of animal species that MNR has listed as 'endangered, threatened or vulnerable', including peregrine falcon *(Falco peregrinus)*, bald eagle *(Haliaeetus leucocephalus)* and wood turtle *(Clemmys insculpta)*.

Cultural heritage sites are found within the signature site and surrounding Crown land. Heritage features that are associated with the site include original portages and campsites along ancient travel routes. More recent historic features include evidence of mining and logging.

Algoma Headwaters Signature Site is situated in the 'Height of Land' climatic region, which is characterized by a moderate, warm boreal *'modified continental'* climate. The Algoma region has some of the highest levels of precipitation in the province. These high levels of rain and snow make for rich growing conditions that benefit many species, including towering eastern white pine *(Pinus strobus)* which grow taller than 15 stories (50 metres) high.

From 1992 to 1996, before this area was identified as a signature site, the Ministry of Natural Resources carried out an individual environmental assessment on two blocks of land totalling 54,000 hectares in the vicinity of Megisan Lake (Figure 7). This precedent-setting EA was carried out to examine the potential impacts of forest management activities on the area's remote commercial tourism facilities. Tourist outfitters initiated the process in order to examine the effects of forest management activities on remote tourism operations. A significant portion (approximately 40 per cent) of the 'area of the undertaking' that was the subject of the Megisan Lake Area Environmental Assessment has now been incorporated and protected within the Algoma Headwaters Signature Site. The details of this EA process are documented in the draft report entitled: "*An Environmental Assessment of Timber Management on Crown Lands in the Megisan Lake Area* (1996)" which was submitted to the Minister of Environment in 1996.

Because the issues of the EA have been resolved, a Declaration Order was issued in February 2002 which removed the requirements and legal status of the individual EA for the Megisan Lake area. Thus, protection of the Algoma Headwaters Signature Site can now proceed. Forest management activities can occur on the remainder of the land base that was formerly encompassed by the EA area (Refer to Section 4.3.1.)

Aboriginal and treaty rights within the Algoma Headwaters Signature Site will continue to be respected. The entire signature site is located within the Robinson-Huron Treaty Area. Traditional natural resource activities by Status Indians with treaty rights for subsistence and ceremonial purposes will be permitted to continue within the signature site.

## 1.1 Signature Site Planning Process

The concept of protected areas known as 'signature sites' is a key part of the *Ontario's Living Legacy* (OLL) initiative, which represents MNR's biggest ever expansion of the parks and protected areas system. The Algoma Headwaters Signature Site is one of nine signature sites established by the OLL process across Ontario (refer to Section 4.3 - Planning History.) In accordance with *Ontario's Living Legacy - Land Use Strategy* (1999), the strategy will recognize and permit the continuation of most existing activities, including current commercial tourism licensed within the area.

While the approved strategy will set the overall management direction for Algoma Headwaters, specific actions required for initiating the strategy will be provided in subsequent directives known as '*Implementation Plans*.' These specific plans will provide further detailed guidance for the protection, management and operation of the signature site. Implementation plans which may be prepared for the Algoma Headwaters could include: Operations, Vegetation Management, Fisheries, Wildlife, and Forest Fire Management Plans.

The Algoma Headwaters Signature Site Strategy will be approved as a park management 'parent plan' for all three regulated provincial parks within the area defined by the OLL Land Use Strategy (1999). The strategy will be a dynamic planning tool, looking forward for a 20-year period.

Planning for the Ranger North Conservation Reserve will be included in the signature site strategy planning process. (This conservation reserve was set aside in 1997, prior to the initiation of *Ontario's Living Legacy*.) A 'Statement of Conservation Interest' (SCI) was prepared in 1999 to establish interim direction for the Ranger North Conservation Reserve. As part of the planning process for Algoma Headwaters Signature Site Strategy, and with full public consultation, resource management direction will be determined for the Ranger North Conservation Reserve. Because the Ranger North Conservation Reserve is adminis-

tered under the *Public Lands Act*, Ontario Parks will work jointly with MNR Sault Ste. Marie District to plan and manage the Ranger North Conservation Reserve.

The process and schedule to develop the signature site strategy appears in Table 1.

TABLE 1: SIGNATURE SITE STRATEGY: PROCESS AND SCHEDULE

| *Item* | *Requirements/Notes* | *Tentative Dates* | *Public Consultation* |
|---|---|---|---|
| Interim Management Statement | Ongoing distribution throughout the planning process. | August 2001 | |
| Terms of Reference | Approval by Managing Director, Ontario Parks and MNR Regional Director, Northeast Region.<br>Core team orientation. | Spring/Summer 2002 | |
| Invitation to Participate | Public notification inviting participation in signature site planning process, and to inspect approved Terms of Reference. | Summer 2002 | ***Public Notification:***<br>EBR Notice of Proposal.<br>Newspaper ads, update OLL website, mail-outs.<br>Review period (45 days) |
| Background Information Document | Compile, analyze and integrate all pertinent information from Sault Ste. Marie and Chapleau District Offices, MNDM, consultant reports, etc.<br>Prepare document and GIS products.<br>Additions/revisions based on public input. | Spring/Summer/Fall 2002 | ***Public Notification:***<br>EBR Notice of Proposal.<br>Newspaper ads, update OLL website, mail-outs.<br>***Information Centres:***<br>(15 day prior notice)<br>Review period (45 days) |
| Management Options | Preparation of document which includes all options for planning and management of site.<br>Production of GIS products (maps, posters, displays, etc.).<br>Analysis of public input. | Fall/Winter 2002 | ***Public Notification:***<br>EBR Notice of Proposal.<br>Newspaper ads, update OLL website, mail-outs.<br>***Information Centres:***<br>(15 day prior notice)<br>Review period (45 days) |
| Preliminary Management Strategy | Selection of recommended strategy & preparation of document based on analysis of public input.<br>GIS product development. | Spring/Summer 2003 | ***Public Notification:***<br>EBR Notice of Proposal.<br>Newspaper ads, update OLL website, mail-outs.<br>***Information Centres:***<br>(15 day prior notice)<br>Review period (45 days) |
| Recommended Management Strategy | Incorporate changes as per public review.<br>Submitted as recommended strategy for final approval. | Summer 2003 | |
| Approved Management Strategy | Production and printing of Signature Site Strategy. | Fall 2003 | ***Public Notification:***<br>EBR Notice of Proposal.<br>Newspaper ads, update OLL website, mail-outs.<br>Review period (45 days) |





## 1.2 SUMMARY OF SIGNIFICANT FEATURES WITHIN THE SIGNATURE SITE

The Algoma Headwaters Signature Site has a wide range of significant values and features requiring protection and/or management. These include, but are not limited to:

- Representative glacial features and landscapes (ground moraine, delta, valley sand and gravel deposits)
- 24 documented vegetation community types, with more than 400 species of plants. Boreal Forest types are dominant, but the Great Lakes - St. Lawrence Forest species (with only 20 per cent coverage), occur in prominent locations such as lakeshores and hilltops, and are thus quite visible
- Old growth red pine *(Pinus resinosa)* and white pine *(Pinus strobus)*, some up to 350 years old and 15 to 20 stories high (50 metres)
- The headwaters of major rivers in the District of Algoma, most notably the Montreal, Batchawana, Goulais, Garden and Mississagi. Smaller rivers that have headwaters in the signature site include the East Goulais, Chippewa, West Aubinadong and the Nushatogaini
- More than 176 small to medium-sized lakes and approximately 200 rivers and streams which support fish populations dominated by lake trout, brook trout, walleye and northern pike
- A variety of wildlife species and their habitats occur in the signature site: 50 species of mammals, 25 species of reptiles and amphibians, 143 species of breeding birds. Moose and white-tailed deer populations intermix in the site
- Species of 'Special Concern' and those considered 'vulnerable', 'endangered' or 'threatened' (e.g. peregrine falcon, bald eagle and wood turtle)
- Prehistoric & historic cultural features, including traditional aboriginal sites
- Recreational features, including a diversity of waterways, canoe routes, beaches, car accessible and backcountry campsites
- Settings with wilderness qualities, which are accessible but retain a sense of remoteness, and offer potential for backcountry travel in extensive settings with no roads

More information about significant ecological, biological and cultural features within the site is being gathered continually, adding to the information base for signature site planning.

Figure 1. Regional Context

Please see separate PDF file for map

FIGURE 2 [illegible]

Please see separate PDF file for map

FIGURE 2a [illegible]

Please see separate PDF file for map

FIGURE 2B: GREATER GILA FLOODPLAIN PARK

Please see separate PDF file for map



FIGURE 2C: SUBREGIONAL NEIGHBORING FLOOD FRACTURE ZONE

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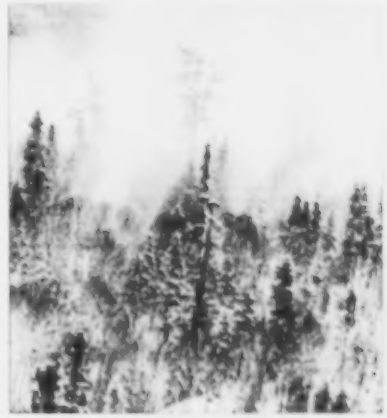
FIGURE 2B: RANGER NORTH CONSERVATION RESERVE

Please see separate PDF file for map



## 2.0 PROTECTED AREAS WITHIN THE SIGNATURE SITE

The Algoma Headwaters Signature Site is made up of four distinct but connected, protected areas: Algoma Headwaters Provincial Park, Gunlais River Provincial Park, Aubinadong - Nushatogaini Rivers Provincial Park, and the Ranger North Conservation Reserve. Given their interconnected nature, the Ministry of Natural Resources will protect and plan all four areas within the signature site in an integrated manner. A more complete description of each area follows.

### 2.1 ALGOMA HEADWATERS PROVINCIAL PARK

The largest protected area within the signature site is Algoma Headwaters Provincial Park (Figure 2a), which is renowned for its beautiful and rugged scenery, towering white pines and diverse forest species. Vegetation varies widely within the provincial park, from the mixed hardwood stands typical of the Great Lakes - St. Lawrence Forest Region (white and red pine, spruce, maple, birch, and cedar) to pure stands of jack pine carpeted with moss, that are more typical of the Boreal Forest Region.

A newly established provincial park, the Algoma Headwaters was recognized during the Megisan Lake Area EA as having significant natural and cultural environments with a high potential for recreation and tourism. A significant portion of the EA "area of the undertaking" has been incorporated into the Algoma Headwaters natural environment class park (Figure 7).

Camping, canoeing, hiking, fishing, hunting, snowmobiling, and wildlife viewing are some of the recreational activities that attract people to the area. Remote, yet accessible, there are numerous natural and recreational features here, including 160 lakes, scenic rolling hills, white pine forests, the facilities of four remote tourism operators, and a limited network of roads.

In the eastern portion of the park, the forests provide good examples of at least seven major forest types, growing on low hills composed of sandy till deposits. The impressive stands of white pine in the Gord and Megisan Lakes area contain some of the largest and oldest trees of this species in Ontario. Sugar maple, white pine, black spruce, balsam fir *(Abies balsamea)*, white birch *(Betula papyrifera)* and eastern white cedar *(Thuja occidentalis)* communities also occur within this area.

The Dyson Lake Natural Heritage Area is protected in the most westerly node of this provincial park, and was identified in an MNR study called 'Natural Heritage Area and Proposed Park

Alternatives' (Jones & Crins, 1998). Consisting of a landscape of scenic rolling hills, it exhibits the most diverse vegetation in the ecodistrict.

## 2.2 GOULAIS RIVER PROVINCIAL PARK
*15,084 hectares*

The Goulais River flows through the heart of Algoma country, and is renowned for its picturesque beauty, rugged landscapes, and fine brook trout fishing (Figure 2b). The name 'Goulais' is thought to have been derived from the French word 'goulet,' (gully), which likely refers to the impressive topography of the Goulais River valley. With the exception of two nodes in Dunnont and Hynes Township, the park boundary extends 200 metres inland from the water's edge.

Abundant opportunities for camping, canoeing, fishing, hiking, mountain biking, and sightseeing make the Goulais River valley a popular destination for recreationists. The waterway includes scenic falls, whitewater rapids, lake sections, and a variety of areas with talus slopes and rock gardens. The river passes over gravel bars and through shoreline wetlands, and apart from high water levels during spring run-off, is generally quite shallow. The area is particularly scenic in the fall, during the height of the brilliant fall foliage.

Flowing in a southerly direction out of the Algoma Headwaters Provincial Park, the Goulais River flows approximately 67 kilometres from Goulais Lake to the Searchmont area, where it flows out of the protected area and continues in a southwesterly direction to Lake Superior. The river originates in Eel Lake, just north of the signature site in Carton Township. The park includes the Goulais River in LaVerendrye and Brule Townships, as well as the Searchmont Delta Natural Heritage Area. This prehistoric delta, which was created at the outlet of a massive channel of glacial melt-waters, is a significant geological feature within this provincial park. This feature provides representation of both the Rawhide Moraine and the post-Algonquin Lake Wyebridge, and was identified in a Survey of Candidate Earth Science Sites (Noble, 1998).

As the Goulais River flows southward through the signature site, it passes out of the more northerly vegetation types of spruce and jack pine dominated Boreal forests, and enters the hardwood and white pine forests of the Great Lakes - St. Lawrence Forest Region. Dominant landform types are characterized by moderately rolling hills, glacial outwash landforms and several series of oxbows, which support forests of balsam fir, white birch, black spruce, white spruce (*Picea glauca*), balsam poplar (*Populus balsamifera*), sugar maple, silver maple (*Acer saccharinum*) and black ash (*Fraxinus nigra*) swamps.

The Goulais River is renowned for its self-sustaining brook trout population, which makes it a popular fishing destination. The river has extremely variable water levels, and fluctuates widely according to levels of precipitation and associated run-off. The park area contains snowmobile and mountain biking trails which use forest access roads adjacent to the Goulais River.

A major canoe route in Sault Ste. Marie District, the Goulais River offers a variety of opportunities for canoeing and kayaking, particularly in the spring when the water level is at its highest. The character and topography of the river varies widely along its course, including a short canyon, 'rock gardens', scenic waterfalls and magnificent rugged hills. The northerly portion of the newly designated waterway class park includes Witchdoctor and Ragged Lakes and is generally smooth, easy paddling, with some short portages around rapids and falls. South of this area, at the Mile 23 Bridge, the river narrows to a stretch of generally continuous rapids for almost 10 kilometres. After the Saddle Lake Bridge, the river changes to swift current for some distance until after Whitman Dam Falls. Closer to Searchmont and beyond, the river slows, widens, and meanders, with numerous gravel bars and oxbows.

Portions of a primary forest access road (the Whitman Dam Road) are within Goulais River Provincial Park. There are three permanent water crossings in the park, with bridges at Saddle Lake, Mile 23, and Tepee Lake. These crossings, along with identified forest access roads, will continue to be utilized by the forest industry. These roads will also continue to provide access to recreational users.

## 2.3 AUBINADONG - NUSHATOGAINI RIVERS PROVINCIAL PARK
*4,928 hectares*

This waterway class park is home to a network of river and lake sections, a portion of which is part of the 85 kilometre 'Ranger Lake Loop Canoe Route' (Figure 2c). The Aubinadong-Nushatogaini Rivers flow from the Algoma Headwaters Provincial Park southward until the two rivers merge, then flow into the East Aubinadong which eventually empties into the Mississagi River. The route continues through a series of interconnecting small lakes, eventually flowing into Saymo Lake at the south end of the park. (From the Saymo Lake Dam, the canoe route extends downstream into Ranger Lake to the south, but this section lies outside the signature site.) In general, the park boundary extends 200 metres from the water's edge, along the course of the waterway.

WHITMAN DAM FALLS - GOULAIS RIVER PROVINCIAL PARK

The west branch of the Aubinadong River drains Megisan Lake, which is one of the largest lakes in the signature site. The east branch of the Aubinadong River is located farther east. It is not contained within this park boundary, but is protected as another waterway park.

The waterway has a varied and rugged terrain, and includes both flatwater and whitewater sections. This canoe route exhibits interesting vegetation patterns along its course, with alternating areas typical of both the Boreal and Great Lakes - St. Lawrence Forests. The rivers are small with sand bottoms, and have rocky, bedrock controlled rapids in some sections.

The Ranger North Road provides access to various lakes within the vicinity of this waterway park, including Gong, Island, Friendly and Saymo Lakes. The rugged Torrance Lake Road provides access to Torrance Lake, and is sometimes used by hunters, fishermen and canoeists travelling into the heart of the signature site. Forest access roads throughout this area receive moderate use by ATV's and snowmobiles.

## 2.4 RANGER NORTH CONSERVATION RESERVE
*6,849 hectares*

The Ranger North Conservation Reserve was established in 1997 under the *Public Lands Act*. It is located in the west of the signature site and is contiguous with Algoma Headwaters Provincial Park in portions of Gapp, Gaudry, Wasy, Bracci, Schembri and Scriven Townships (Figure 2d). The reserve is the result of an amalgamation of three old-growth white and red pine areas, identified in 1990 (Iles, 1990). It includes the Quinn Lake, Bliss Lake, and the eastern half of the Galloway Lake old growth red and white pine forests.

Old growth stands constitute approximately 25 per cent of the Ranger North Conservation Reserve, and are among the largest concentration of

[illegible] Nushatogaini Rivers Provincial Park

old growth red and white pine forests in northeastern Ontario. About 37 per cent of the forests in the Ranger North Conservation Reserve are estimated to be greater than 100 years old. The old growth hardwoods average 150 to 200 years in age, while cedar stands are about 180 years old, with the average age of the white and red pine being 150 to 180 years. This reserve is believed to be one of the oldest pine forest complexes in Ontario. Some white pine are estimated to be more than 350 years old.

The Ranger North Conservation Reserve was established prior to the release of *Ontario's Living Legacy - Land Use Strategy* (1999). A 'Statement of Conservation Interest' (SCI) was prepared in 1999 to guide direction for management of this significant area. Most recreational and non-commercial activities that have traditionally occurred in this area are permitted to continue, provided they pose no threat to the reserve's natural features and ecosystems. However, no commercial timber harvesting, mining, or commercial hydroelectric power development is permitted in the Ranger North Conservation Reserve.

Roads in the vicinity of the Ranger North Conservation Reserve include the Ranger North Road (which parallels the west boundary of the Conservation Reserve), and the Point Lake Road (which touches the southeast corner of the Conservation Reserve). In accordance with conservation reserve policy, mechanized means of travel, including snowmobiles and all terrain vehicles (ATV's), is permitted only on existing authorized roads or trails. The remoteness of this reserve, as well as the limited accessibility to areas within the reserve, will be protected.

## 3.0 Regional Setting

The Algoma Headwaters Signature Site is located in the District of Algoma, approximately 90 kilometres northeast of Sault Ste. Marie and approximately 75 kilometres east of Lake Superior (Figure 1). The town of Chapleau lies 50 kilometres to the north of the site, while Thessalon lies 140 kilometres to the southeast.

The signature site is approximately 60,000 hectares, and includes lands and waters north of Ranger Lake surrounding Megisan Lake and the area encompassing Dyson, Point, and Goulais Lakes. It also includes the Nushatogaini-Aubinadong Rivers and Goulais River Waterway Parks, as well as the Ranger North Conservation Reserve.

The signature site is named "Algoma Headwaters" because the area contains the headwaters of a number of major rivers that drain the District of Algoma, notably the Batchawana, Goulais, Garden, Montreal and Mississagi Rivers. The signature site encompasses all, or portions of, 25 townships. They are: Beckett, Bracci, Butcher, Carruthers, Carton, Daumont, Ewen, Fertier, Gapp, Gaudette, Gaudry, Handleman, Havrot, Hoffman, Hynes, LaVerendrye, Lunkie, McIlveen, Patenaude, Reilly, Schembri, Scriven, Sherratt, Way-Whitc, and Wlasy.

The Algoma Headwaters Signature Site lies within the Sault Ste. Marie and Chapleau Districts of the Ministry of Natural Resources. To the north and east, the boundary of Algoma Headwaters Provincial Park is shared with Chapleau District. On the east, the boundaries of the Algoma Headwaters Provincial Park and the Aubinadong-Nushatogaini Rivers Provincial Park are within the jurisdiction of the Blind River Area Office of the Sault Ste. Marie District.

### 3.1 Population Centres

There are no communities or settlements situated within the signature site. The nearest community is the village of Searchmont (population 250), which is situated on Highway 532, just south of the terminus of Goulais River Provincial Park. The most notable facility in this community is a well known alpine and Nordic ski resort. There is also a general store, public school, and several lodges/bed and breakfast accommodations. The hamlet of Ranger Lake, a summer resort and cottage community, is situated at the south end of Ranger Lake on Highway 556, south of Saymo Lake and the Algoma Headwaters.

Southeast of Algoma Headwaters Signature Site, the closest community is the village of Wharncliffe, while Thessalon lies 140 kilometres farther south of the signature site. The cities of Sault Ste. Marie, Wawa, Chapleau and Blind River are also within the region of the signature site.

## 3.2 ACCESS

Access to the signature site area can be gained primarily from the south and east. Perhaps most commonly used, the Ranger Lake Road and Searchmont Highway provide access to the signature site area via the Whitman Dam Road, and Laughing Lake Road. The Algoma Headwaters Signature Site can also be reached from the east via Highway 129 (linking Thessalon to Chapleau), then via the Ranger Lake Road to the Domtar Road, and finally to the Ranger North Road East (Figure 3).

In general, access to Algoma Headwaters decreases from being relatively easy in the southern part of the site, to almost non-existent in the northern reaches. Traditional access to the area, before the advent of aircraft, was solely by canoe. In the mid-1900s, float-equipped aircraft became an alternative means of access to the area.

A limited road network was constructed in the mid-1960s to provide access for timber harvesting. Many of these roads have since become impassable, as water crossings have deteriorated, and road beds have become overgrown with vegetation. The forest industry will continue to have access on existing roads within, and adjacent to, the signature site. The primary and secondary forest access roads in the vicinity of the Algoma Headwaters provide access for anglers, hunters, canoeists and recreationists in summer, and for snowmobiles and ice fishermen in winter. There is also some ATV use of the park area throughout much of the year.

Algoma Headwaters Provincial Park is bisected by the Point Lake Road. The western side is encircled by the Ranger North and Domtar Roads. The Torrance Lake Road is a poorly maintained forest access road from the 1960s. It is commonly used by anglers, hunters and canoeists to reach the south end of Torrance Lake, which then affords water access to Megisan Lake. Other passable roads in the vicinity of the Algoma Headwaters Signature Site include: the Whitman Dam, Domtar, Ranger North Rd. West, Ranger North Rd. East, Shortcut, and the Laughing Lake Roads.

There are several tertiary logging roads that are now closed to vehicular traffic, including the Eileen and Coppens Lakes Road, Dead Lake Road, and the Megisan Lake Road. Use restriction signs are posted on these roads to prevent unlawful access to the designated tourism lakes: Megisan, Affleck, Patter (also known as Patterson) and Goulais Lakes. The road located north of Dead Lake (which runs west towards Goulais Lake) granted access for harvesting operations on the east side of Goulais Lake in the late 1980s and early 1990s. However, this road has since been closed with a berm and has also been posted with 'no access' signs. A forest access road system was also built in Ferrier Township, which crossed the Nushatogami River in the east part of the signature site. However, in order to restrict access, this bridge was removed in 1992.

Because ground access is difficult, most of the northeast portion of the signature site, including Patter(son) Lake, Goulais Lake and Prairie Grass Lake (sometimes called Redwood Lake) are all accessed almost exclusively by air, predominantly by tourist fly-in operators which have tourism camps on these lakes.

In summary, access can be gained to the Algoma Headwaters Signature Site as follows:

- FROM THE WEST AND SOUTH: Access is from the communities of Sault Ste. Marie and Searchmont via the Whitman Dam Road and subsequently the Domtar Road and Laughing Lake Road, to the Ranger North Road.
- FROM THE EAST AND SOUTH: Access is from the town of Thessalon, north on Highway 129 to the Ranger Lake Road and north onto the Ranger North Rd. E. (northeast side)
- AIR ACCESS: Most major water bodies in the signature site are currently accessible by private and commercial aircraft. Although air access enables private sport fishing and other recreational uses, most air traffic is by commercial tourist operators.
- WATER ACCESS: Motorboat use is common in the signature site, and occurs on lakes where there is road access, aircraft accessibility, and where commercial tourist facilities are found. Canoeists also use major water bodies, as well as some of the less accessible waterways within the signature site.

FLOAT PLANES EQUIPPED ACCESS TO REMOTE LAKES IN THE SIGNATURE SITE

## 4.0 Planning Area

### 4.1 Land Use/Tenure

There is minimal development in the Algoma Headwaters Signature Site. Present land use activities adjacent to the signature site are generally limited to timber harvesting, trapping, remote commercial tourism and general public recreation. Existing recreational and tourism uses include canoeing, camping, fishing and hunting. Many of the land use policies and permitted uses are defined in *Ontario's Living Legacy - Land Use Strategy* (LUS, 1999), and are outlined below. Where required, more detailed planning will be undertaken to determine site specific policies that will maintain the identified values.

The Algoma Headwaters Signature Site contains various tourism establishments, including lodges on Megisan, Goulais and Patter(son) Lake. There are five outpost camps, including those on Gord Lake, Prairie Grass Lake, Affleck Lake, Nushatogaini River and Nushatogaini Lake. In the past, several 'mini' Land Use Permits were issued to tourist outfitters for tent platforms (used for hunting purposes only) on such lakes as Nokomis, Lance, Firetrail and Affleck. These were not active at the time the signature site was designated.

As stated in the *Ontario's Living Legacy - Land Use Strategy*, the existing tourist facilities will be permitted to continue to operate within the protected area. In addition to the commercial tourism establishments, there are a number of private Land Use Permits. Patented parcels are excluded from the signature site. There are 16 private recreation camps which are for personal (i.e. non-commercial) use only, most of which are patented and thus excluded from the signature site. These include the camps on Saymo, Ragged, Patter(son), Goulais, Megisan, Prairie Grass, Gong and Nushatogaini Lakes, as well as on the Nushatogaini River.

There are three trapping cabins: one on the Goulais River to the north of Saddle Lake Road, one on the Aubinadong River in Ewen Township, and another at the west end of Dead Lake. In the Ranger North Conservation Reserve, there is a parcel of private property on an island in Quinn Lake. A small MNR camp is situated on Gong Lake with another located on the north shore of Little Quinn Lake in Bracci Township. There are remnants of an old trap cabin on Dyson Lake in Wlasy Township.

Areas adjacent to the protected area remain important to the forest industry. Forestry activities in these adjacent areas will be carried out in accordance with the requirements of the *Crown Forest Sustainability Act*.

Mineral exploration and mining are not permitted within Algoma Headwaters Signature Site. There are a number of leased mining claims in Gapp Township, in the vicinity of Hanes and Butter Tin Lakes. Two patented mining claims occur in Lunkie Township, and another is located in Daumont Township. Both abut the boundaries of Goulais River Waterway Park. Existing mining claims adjacent to and outside the boundaries of Algoma Headwaters Signature Site have been designated as forest reserves, and encompass approximately 600 hectares.

Forest reserves are designations where protection of natural heritage and special landscapes is a priority, but some resource use can take place, with appropriate conditions. Commercial forest harvesting and peat extraction is not allowed. Mining and related access are permitted within forest reserves. (*Land Use Strategy*, 1999).

In accordance with *Ontario's Living Legacy - Land Use Strategy* (1999), access through the signature site to mining lands (i.e. forest reserves and mining patents) will be permitted for purposes of mineral exploration, development or operations. All existing mining land tenure within *Ontario's Living Legacy* sites, including mining claims, leases and patents, remain protected under the Mining Act and will be treated as any others within the province. Access, as it relates to mineral exploration and mining, will be determined through management planning, and will be in accordance with the requirements of the *Environmental Assessment Act*.

Aggregate extraction will not be permitted in the signature site except where:

- There is an existing aggregate permit,
- Aggregate is required in support of mineral exploration or mining within the Forest Reserve and there are no feasible sources outside the reserve, or
- An aggregate permit is required under the *Aggregate Resources Act* for the production of industrial minerals and 'building stone'.

There are three pre-existing waste disposal sites within the vicinity of the signature site. The Ragged Lake dump in Gaudry Township is situated just inside the signature site. Two additional sites are situated outside, but adjacent to, the protected area boundary. These include one west of Gong Lake in McIlveen Township, and the other is along the Whitman Dam Road in Hodgins Township.

A long term Land Use Permit is issued to Ontario Hydro Services for their utility corridor with high-tension transmission lines that bisect the Aubinadong-Nushatogaini Rivers Provincial Park. This line is visible on the canoe route where it crosses Gong Creek, just northeast of Gong Lake, and over Fyfe Lake along the Ranger North East Road.

### 4.2 Existing Development

Apart from several commercial tourism establishments, there is little development and few facilities within the signature site. Many lakes have landings with developed campsites accessible by car (e.g. Friendly Lake). There are currently 64 documented camping areas or campsites in the signature site. Many areas have not yet been surveyed to document all existing campsites.

Access points are located on the following lakes: Hanes, Quinn, Butter Tin, Dyson, Point, Chubb, Graham, Tepee, Torrance, Ragged, Gong, Witchdoctor, Fyfe and Hound Lakes, as well as near Dyson Lake, and on the Point Lake Road. There has been long term, traditional use of the area, which is very evident from the condition of some of the landings and access points.

MNR and Ontario Parks have no facilities or services which operate within the signature site. The intent of the signature site strategy will be to protect signature site resources, manage visitor use, and ensure that operations are sustainable in an environmentally, socially and economically acceptable manner.

### 4.3 Planning History

#### 4.3.1 Megisan Lake Area Environmental Assessment

The origins of the Megisan Lake Area Environmental Assessment (EA) date back to 1989, when forest management activities were being planned for the Megisan Lake area (Figure 7). The five year Megisan Lake Area Environmental Assessment was a groundbreaking process as it was the first (and to date, only) 'individual timber EA' carried out for forest management activities in Ontario.

On March 3, 1989, a group of tourism operators active in the area submitted a request to the forest

management planning team for the Ranger Lake Crown Management Unit (CMU). A map entitled "***Tourism Operators' Proposed Buffer Zone for Protection of Remote Tourism Value***" was prepared by the tourist operators for consideration by the forest management planning team. This showed a proposed "buffer zone" containing 16 full townships and four half townships, comprising a 1,663 square-kilometre area. The tourism operators requested that timber operations and new road construction be precluded from this area. Later, the group asked the Minister of Environment to order an individual EA relating to the Ranger Lake Crown Timber Management Plan (1990 to 2010).

In late 1991, the Ministry of Environment (MOE) granted the tourism operators' revised request, and MNR subsequently accepted MOE's requirement to undertake an individual EA for the Megisan Lake area. The focus of the EA was to analyze the impacts of forest management activities on the remote fly-in tourism industry, particularly the impacts of primary and secondary road construction in the area. There was a strong concern that this would diminish the 'wilderness experience' for fly-in clients, and negate the need for air travel to locations that had been formerly remote.

The area that was officially delineated to be the subject of the EA comprised portions of 10 townships in Sault Ste. Marie and Chapleau Districts and consisted of two distinct blocks (Figure 7). The western block encompassed 12,830 hectares in the vicinity of Goulais Lake, and the eastern block was a large area centred around Megisan Lake, with an area of 40,974 hectares. The total area of these two blocks which comprised the 'area of the undertaking' was 53,804 hectares. From the beginning of the EA process, forestry operations and road building were suspended in the 'area of the undertaking', pending a resolution to the issue.

Between 1992 and 1996, MNR prepared the EA draft document entitled "*An Environmental Assessment of Timber Management on Crown Lands in the Megisan Lake Area* (1996)", and released it for public review in early 1996. The goal of the process was to determine whether timber harvesting should be carried out in the Megisan Lake area, and if so, how it should occur.

In 1997, with the pending announcement of the 'Lands for Life' land use planning exercise, MNR decided to complete this new planning exercise first, and then re-evaluate the draft Megisan Lake Area EA in light of any land use decisions that arose from Lands for Life. *Ontario's Living Legacy* (which evolved from the 'Lands for Life' process) was released in 1999. This document identified the Algoma Headwaters Signature Site as a proposed protected area, which encompassed more than 40 per cent of the Megisan Lake Area EA 'area of the undertaking.'

It is recognized that since the draft Megisan Lake EA was prepared, there have been numerous developments aimed at improving forest management practices on Crown Land. These include new protection guidelines for tourism and revised silvicultural requirements, including the approval of the Class EA for Timber Management on Crown Lands (May 1994), with its 115 terms and conditions. In addition, new requirements for compliance with the *Crown Forest Sustainability Act* and other current forest management practices are also in place.

On February 6, 2002, MOE approved a 'Declaration Order' which has removed the requirements for an individual EA for the Megisan Lake area, making it no longer applicable to the area. This means the candidate provincial parks within the signature site can now be regulated, and forest management activities (with practices that meet current forest management planning requirements for Northern Ontario) can now proceed on the remainder of the land base lying outside the Algoma Headwaters Signature Site boundary.



### 4.3.2 ONTARIO'S LIVING LEGACY

*Ontario's Living Legacy - Land Use Strategy* (1999) evolved from the '*Lands for Life*' planning process which was carried out from June 1997 to July 1999. The most ambitious planning initiative ever launched by the MNR, *Ontario's Living Legacy* resulted in the proposed establishment of 378 new protected areas and elicited widespread public involvement, while integrating forestry and mining interests on the landscape.

As part of the *Ontario's Living Legacy* initiative, nine featured areas known as 'signature sites' were proposed. These special areas were identified as having significant tourism and recreational potential, which warrant increased levels of planning, management and promotion. These sites complement Ontario's system of protected areas representative of natural heritage and special landscapes. Besides Algoma Headwaters, the remaining eight signature sites are: Great Lakes Heritage Coast, Lake Nipigon Basin, Woodland Caribou, St. Raphael, Nagagamisis Central Plateau, Killarney, Spanish River Valley and Kawartha Highlands.

A 60,000 hectare area in central Algoma will be protected by three provincial parks: Algoma Headwaters (a natural environment class park) and two waterway class parks: Goulais River and Aubinadong - Nushatogaini Rivers. These parks, along with the Ranger North Conservation Reserve (regulated in 1997), collectively comprise the Algoma Headwaters Signature Site (Figure 2).

As outlined in *Ontario's Living Legacy - Land Use Strategy* (1999), signature site planning will recognize most existing uses, including authorized commercial tourist licences. Hunting, fishing, and trapping are permitted in all newly created protected areas through *Ontario's Living Legacy*, including Algoma Headwaters, subject to zoning and management planning prescriptions. Commercial timber harvesting and commercial hydroelectric development are prohibited in these new *Ontario's Living Legacy* areas. There will be no mining or mineral exploration on untenured land within *Ontario's Living Legacy* sites, including Algoma Headwaters Signature Site.

Planning and implementation for Algoma Headwaters Signature Site commenced in the fall of 2000. A Project Description and Project Plan were developed to outline the process and method by which a signature site strategy would be developed. An MNR/Ontario Parks Project Team is in place to prepare the Algoma Headwaters Signature Site Strategy. A terms of reference and communications plan have been completed to guide the project team in the development of the signature site strategy.

Until the signature site strategy is approved, an Interim Management Statement (IMS) is in place for the Algoma Headwaters Signature Site. The IMS consolidates direction for the signature site as provided in *Ontario's Living Legacy - Land Use Strategy*, District Land Use Guidelines, Crown Land Atlas, Ranger North Conservation Reserve and Provincial Park Management Planning Policies.

Various field inventories were carried out in 2000 and 2001 which contribute to the knowledge and use patterns within the signature site. These identify significant features and values within the Algoma Headwaters Signature Site, including: earth and life science reports, recreation inventories, and a cultural heritage assessment. Consultation and field assessment have allowed MNR to refine the Algoma Headwaters Signature Site to ensure that an appropriate boundary has been defined for the area.

Outpost camp on Goulais Lake

## 4.4 Socio-Economic Context

The Algoma Headwaters Signature Site is a newly established protected area under *Ontario's Living Legacy*. At present the site receives use with limited management of services and facilities (e.g. access, camping). As such, there is potential, with future management, to enhance use with benefits to the surrounding communities. In terms of commercial tourism, existing remote hunting and fishing experiences will continue as premium services. Future approaches to management through the implementation of the signature site strategy will retain existing services and add new opportunities while sustaining this outstanding wilderness setting.

Local anglers and hunters contribute to the economy through taxes and licences, as well as by purchasing equipment and supplies they use while visiting the signature site. Based on surveys carried out for the Megisan EA, the average daily expenditure for anglers and hunters is estimated to be about $90 per day. In general the place of origin of recreationists who use the area is 55 to 60 per cent from the local area, while 40 to 45 per cent are from elsewhere, most commonly from the United States (Deloitte & Touche, 1993).

Once the boundary is legally regulated, and the signature site strategy is in place, a level of public service will be provided through a marketing, tourism and recreation plan. The signature site will be promoted for its significant natural and cultural heritage values, and the high quality, backcountry recreational opportunities it affords.

Recreationists tend to be attracted to remote backcountry areas. As wilderness becomes increasingly scarce in today's world, it is likely that this attribute will draw greater numbers of people to the Algoma Headwaters Signature Site. As the area becomes more popular, the closest communities of Searchmont and, perhaps, Wharncliffe could expect to derive more economic benefit from their location en route to Algoma Headwaters. Sault Ste. Marie, Chapleau, Thessalon and Wawa may also benefit from their proximity to the signature site.

# 5.0 Inventory and Evaluation of Natural & Cultural Resources

## 5.1 Climate

The Algoma Headwaters Signature Site is situated within the '*mid-humid*' humidity belt and '*warm-boreal*' thermal belt known as the 'Height of Land' climatic region (Chapman and Thomas, 1968). The climate affecting the signature site is described as 'modified continental', which is characterized by long, cold winters and short, warm summers. In winter, cold polar air masses produce dry, clear weather. In the summer, a succession of air masses crosses the area, with warm, humid air from the south, alternating with colder, drier air from the north.

Climate is somewhat variable within the signature site, primarily due to the variation in relief. The average January temperature is -12° C, while the average temperature in July is 17° C. Annual precipitation is approximately 906 mm, and the mean annual number of annual freeze-free days is approximately 160. Freeze-up of lakes usually occurs from late November to early December, while ice-out occurs in late April to early May.

The Ministry of Natural Resources maintains seasonal weather stations at Ranger Lake and Flame Lake (south of Chapleau). Based on multi-year averages taken at these stations, the prevailing wind in early summer is out of the west, however, winds from the south, southwest and northwest are also common. Normal summer wind speeds range from seven to 25 kilometres per hour. Average summertime relative humidity ranges from 48 to 80 per cent.

## 5.2 Earth Science

### 5.2.1 Bedrock Geology

The Algoma Headwaters Signature Site is entirely within the western Abitibi Subprovince of the Superior Province, which are structural subdivisions of the Canadian Shield (Figure 5). Almost all of the Precambrian bedrock underlying the signature site solidified approximately 2.75 to 2.6 billion years ago, making it some of the oldest rocks to form on the surface of our ancient molten planet.

The rocks of the eastern, central and most of the western portions of the signature site are varieties of granitic gneisses and migmatites, components of the Ramsey Gneiss Domain. In the southern section, most of the Goulais River Provincial Park contains younger granitic intrusions of the Algoma Plutonic Domain. A small area of the western part of the signature site contains an assemblage of metamorphosed volcanic rocks, part of the Batchawana greenstone belt.

All of the preceding rock units are intruded by two clusters of diabase dikes. The older is the northeast-striking Preissac quartz diabase cluster, which is about 2.15 billion years old. The younger Sudbury dike cluster strikes west-northwest and intruded almost 900 million years later. The two sets of dikes occupy large linear fractures or faults,

which are products of major crustal deformations.

The Ramsey Geniss Domain consists mainly of gneisses of granitic composition, granitic plutons and xenoliths and larger inclusions of metavolcanic and metasedimentary rocks. It also contains migmatites, rocks of mixed plutonic and metamorphic history.

The Algoma Plutonic Domain rocks are primarily coarse-grained granites, emplaced as several intrusions after the deformation and metamorphism of the Ramsey Gneiss Domain and Batchawana greenstone belt. They are part of one of the larger areas of similar rocks within the western Abitibi Subprovince.

Although only a small eastern portion of the Batchawana greenstone belt occurs within the Algoma Headwaters Signature Site, it contains most of the components of a typical greenstone assemblage in the Abitibi Subprovince: rocks of lava flow and pyroclastic (explosive) origin. Their composition ranges from mafic to felsic and is dominantly mafic, in the form of massive and pillow texture flows from surficial and submarine eruptions, respectively. The pyroclastic rocks are mainly intermediate to felsic in composition and consist of a variety of material ejected from ancient volcanoes, ranging in size from ash to coarse fragments of breccia.

Bedrock exposures on the Goulais River

Mineral Deposit Inventory records of the Ministry of Northern Development and Mines list 32 mineral occurrences within the eastern Batchawana greenstone belt. Of these occurrences, seventeen are for copper-zinc and five are for gold. There are no documented mineral occurrences in the gneissic granite terrain underlying the eastern portion of the Algoma Headwaters Signature Site.

Further detail on specific earth science features within the site can be found in the Earth Science Inventory provided as background information to this report (see Frey & Duba, 2002 in selected references).

### 5.2.2 Surficial Geology

Surficial deposits within Algoma Headwaters Signature Site are mainly ground moraine deposited by continental glacial ice of the Late Wisconsinan age (Figure 6). The area became ice-free about 10,000 years ago. The deposits are usually less than one metre thick on middle and upper slopes, but may be deeper on lower slopes below high ridges. Bare bedrock exposures are common.

The most prominent geological features in the area include: segments of the regionally significant Cartier Moraine, the deltaic and valley 'train' deposits of the West Aubinadong River, and an ice contact delta on the Goulais River (known as the Searchmont Delta Natural Heritage Area.) Both of these latter features are provincially significant.

The uplands of the Algoma Headwaters Signature Site are covered by a mantle of variable depths of stony, bouldery, sandy till. Soil textures range from loamy sand to sandy loam. There are limited areas of glacio-fluvial deposits in the form of outwash plains and channels, and southward trending eskers. These eskers are characterized by deposits of sand, gravel and boulders, and generally appear as sinuous ridges on the landscape. The dry lacustrine and glacio-fluvial sand flats typically yield extensive tracts of jack pine forests. Peatlands have developed in a few depressional flats on these sand plains, and exhibit cooler than normal site conditions.

Distinct areas of glacio-fluvial outwash deposits, consisting of gravel and sand occur in small patches in the Algoma Headwaters Signature Site. The most extensive deposits are found between Dyson and Dismal Lakes, along the southern portion of the Goulais River, around the northern sectors of Megisan Lake, and adjacent to the Nushatogaini River north of Gong Lake.

An Ice Age delta, known as the Searchmont Delta, is a Natural Heritage Area within the Goulais River waterway park. It formed at the outlet of a massive channel of glacial meltwater, and could be two small delta surface remnants that may have fronted a moraine ridge that was deposited in a cross-valley position. This feature provides representation of both the Rawhide Moraine and the post-Algonquin Lake Wyebridge, and was identified in a Survey of Candidate Earth Science Sites (Noble, 1998).

The Algoma Headwaters Signature Site also contains shallow organic deposits on poorly drained upland sites, with deeper deposits in poorly drained depressions or flat low-lying terrain. Areas with poor drainage, such as swamps, marshes, bogs and fens, have developed organic soils.

## 5.3 Topography

The topography of the Algoma Headwaters Signature Site is dominated by bedrock-controlled uplands, and varies from gently rolling to hilly terrain. Landforms in the area are typical of the southern Canadian Shield. The area has rugged topography, including rolling hills, rocky barren knobs, cliffs, scarps and associated talus slopes, with some exposed bedrock.

Elevations range from 450 to 600 metres above sea level, with areas of high relief being greater than 60 metres, while areas of moderate relief are between 15 and 60 metres.

The signature site contains a latticework of lakes, rivers and streams. The shape, size and pattern of these waterways are a reflection of the pervasive control of the underlying bedrock structure.

The area is characterized by moderately broken terrain of bedrock-controlled uplands, covered by a discontinuous layer of stony, sandy till. Local scarps are common on rocky uplands.

Lakes and streams are numerous in the Algoma Headwaters area, and their shape, size and patterns reveal the control of the underlying bedrock structure. Wetlands occupy approximately five per cent of the signature site and are usually found in low-lying areas. Those wetlands associated with lakes and streams tend to be small, occupying narrow channels created by faults in the underlying bedrock.

## 5.4 Drainage

The Algoma Headwaters Signature Site has a variety of waterbodies, including wetlands, small and large lakes, small streams and navigable rivers (Figure 8). The site contains approximately 200 streams and 175 lakes. Some of the largest lakes are Gong, Saymo and Megisan. The area also contains the headwaters of several rivers, including: the Goulais, Aubinadong, Nushatogaini, Batchawana, Chippewa, and Montreal rivers (which drain into Lake Superior), as well as the Mississagi and Garden River (which flow into Lake Huron). Drainage in the signature site tends to flow to the south and west.

The Ministry of Natural Resources has responsibility for two dams situated within the signature site at the following locations: the southeast corner of Dyson Lake in the Algoma Headwaters Provincial Park, and at the south end of Saymo Lake in the Aubinadong-Nushatogaini Rivers Provincial Park. Both dams were constructed in the 1940s. The dam on Dyson Lake is quite dilapidated, and now holds back little water.

The Saymo Lake dam, although functional, is in poor condition, and an emergency plan is in effect in case it fails. There are plans to replace this struc-

ture. An Environmental Assessment has been prepared, recommending that a new rock weir be constructed to replace the existing structure. The provision of an overflow weir would still allow for the upstream impoundment of water, thereby maintaining existing water levels in Saymo Lake. An 'overtoppable' weir would require no manual operation and very limited maintenance. It would provide an opportunity for fish migration from Ranger Lake to Saymo Lake.

Major structural geological features, readily visible from space, define the topography and relief, and control the drainage patterns of the Algoma Headwaters Signature Site.

## 5.5 Water Quality

Lakes in the signature site are predominantly oligotrophic (nutrient poor), and have excellent water quality (i.e. free of contaminants). Limited shoreline development has meant that nutrient input and associated water quality deterioration resulting from algae growth has not occurred. The general area of the signature site and Ranger Lake receives a moderate amount of acidic deposition, mainly attributable to long-range transport from the mid-western United States. Water sampling conducted by MNR on lakes in the vicinity of Megisan Lake suggests an adequate buffering capacity.

Water clarity within the signature site, although variable, tends to be generally good, with most water bodies exhibiting clear water. However, as with many areas in Northern Ontario, the waters tend to have a slight tannin stain. (Tannin is a naturally occurring dark substance found in organic matter.) Some elevated headwater lakes such as Foxwell and Moon Lakes are particularly clear.

Northern yellow-eyed grass (*Xyris montana*)

## 5.6 Life Science

The diverse habitat of the signature site supports numerous species of plants and animals. During recent fieldwork, 403 plant species were identified, of which 316 were vascular plants, and 87 were mosses and lichens. Only seven non-native vascular plants were identified (primarily at access points, roadsides, and other disturbed locations), which is a very low occurence compared with other areas of Ontario. This is an indication of the pristine nature of habitats within the signature site.

The greatest diversity of plant species was identified in wetlands, particularly within fens. Rock barrens and beaches also exhibit a high diversity of species. Wetlands occur on only five per cent of the land base, and rock barrens and beaches occupy an even smaller percentage.

### 5.6.1 Vegetation

Situated between the Boreal Forest to the north, and the Great Lakes - St. Lawrence Forest to the south, the Algoma Headwaters Signature Site exhibits characteristics of both. One of the most significant features of the signature site are its old growth stands of both white and red pine, as well as some hardwood species. (In this part of Ontario, white and red pine are considered to be 'old growth' when they reach 140 to 150 years of age. Refer to Figure 11).

A comprehensive list of tree species found in the Algoma Headwaters Signature Site (in descending order of occurrence) is as follows: white birch, black spruce, sugar maple, jack pine, poplar (primarily trembling aspen *(Populus tremuloides)*, some balsam poplar *(Populus balsamifera)*, with a few large toothed aspen *(Populus grandidentata)*, white pine, eastern white cedar, balsam fir, yellow birch, white spruce, red maple *(Acer rubrum)*, red pine and tamarack *(Larix laricina)* (North-South Environmental Inc., 2001). Some tree species occur within the Algoma Headwaters at the northern limit of their range, including red oak *(Quercus rubra)*.

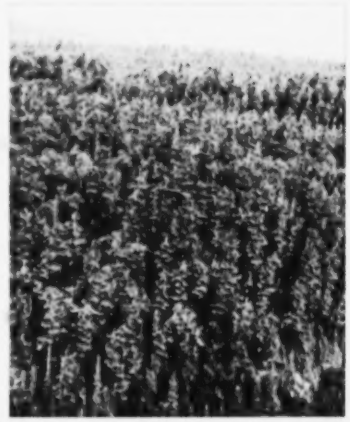
Forests cover approximately 82 per cent of the signature site (Figure 10), and are generally in the range of 50 to 100 years old. Wetlands comprise five per cent of the protected area (average wetland size is 2.5 hectares), with half of wetlands being forested, usually with black spruce. Open water (lakes and rivers) makes up about 13 per cent of the area of Algoma Headwaters.

The Great Lakes - St. Lawrence Forest elements comprise about 20 per cent of the landscape within the signature site. These are represented by mixed stands made up of varying proportions of white and red pine, sugar and red maple, and yellow birch, all of which occur on warmer sites, such as hill crests and south-facing slopes.

Species within the signature site exhibiting more boreal affinities include: black spruce, white spruce, jack pine, balsam fir, white birch and trembling aspen. Typically, forests of black spruce (with some tamarack) grow on lowland sites, with jack pine occurring on the drier uplands. Sand flats also support extensive stands of jack pine.

Owing to its remote location and relative inaccessibility, the signature site is a largely undisturbed landscape, with some pristine areas. Timber harvesting has not occurred in recent times within the site. However, some areas have been affected by natural disturbances such as forest fire, disease and insect outbreaks (North-South Environmental Inc., 2001).

Ontario's rich natural diversity is divided into 14 'eco-regions', which have areas of similar forest and landform types. These eco-regions are subdivided into 67 'eco-districts', which are delineated based on similar characteristic patterns, such as climate, vegetation and physiography. Ecoregion 4E consists of a band of transitional forest (approximately 100 kilometres wide), stretching from Sault Ste. Marie to Temagami. The Algoma Headwaters Signature Site straddles the boundary between eco-districts 5E-13 and 4E-3 (Figure 9). The Algoma Headwaters protected area lies within the transition zone where the Boreal Forest and the Great Lakes - St. Lawrence Forest regions overlap. During fieldwork in the Algoma Headwaters, numerous vascular plant species were recorded that were not previously reported in eco-district 4E-3.



Typical mixed old growth pine and birch forests in Algoma Headwaters Signature Site

FEN AND OPENING FOR AT HANTA LAKE

White pine is present throughout much of the signature site on a wide variety of site conditions. Large diameter trees often occur as a canopy species in mixed stands. In contrast, red pine is found on the shallow soils and exposed ridges, while jack pine grows on both shallow soiled ridge sites and on the deep sandy sites. Sugar maple and red maple become increasingly restricted to higher elevations as they reach the northern limits of their range. These species often occur in mixed stands with white birch, white pine, white spruce or balsam fir. Yellow birch often occurs in association with white cedar on lower slopes and in swamps. Moist, rich sites support mixed forests of white cedar, poplar, spruce and black ash.

Conifer species typical of more northerly environments include black spruce, tamarack and white cedar and are present in cold, wet peatlands. Black spruce and white cedar commonly occur in upland sites on soils of variable depth, as do mixed forests of white birch, poplar, white spruce and balsam fir.

Vegetation site types range from cliffs and rock barrens to upland coniferous, mixed and deciduous forest to bogs, fens and aquatic communities. The area contains a variety of wetlands, including black spruce bogs and aquatic fens.

The upland communities within the Algoma Headwaters Signature Site are characterized by coniferous forests, mixed forests, rock barrens and cliffs. Shoreline, thicket swamp, treed bog, treed fen, open fen, beaver meadows, marsh and aquatic marshes are all part of the wetland associations that have been identified. Dismal Lake is the only known open marshland in the signature site.

A variety of vascular plants occur in the signature site which are typical of the transition forest between the Boreal and the Great Lakes - St. Lawrence Forest Regions. These include: pink lady's slipper *(Cypripedium acaule)*, star flower *(Trientalis borealis)*, twinflower *(Linnaea borealis)*, yellow clintonia *(Clintonia borealis)*, pitcher plant (Sarracenia purpurea), bunchberry *(Cornus canadensis)*, downy yellow violet *(Viola pubescens)*, wild lily-of-the-valley *(Maianthemum canadense)*, goldthread *(Coptis trifolia)*, rose twisted stalk *(Streptopus roseus)*, wild sarsaparilla *(Aralia nudicaulis)*, large-leaved aster *(Aster macrophyllus)*, purple fringed orchid *(Platanthera psycodes)*, rose pogonia *(Pogonia ophioglossoides)*, and fireweed *(Epilobium angustifolium)*. Commonly occurring shrubs are mountain maple *(Acer spicatum)*, blueberry *(Vaccinium angustifolium* and *vaccinium myrtilloides)*, cranberry *(Vaccinium spp.)*, wintergreen *(Gaultheria procumbens)*, and beaked hazel *(Corylus cornuta)*.

Mosses and lichens found here that have been identified as rare, both regionally and provincially include hylocomnium moss *(Rhytidiadelphus squarrosus)* and coral lichen *(Stereocaulon dactylophyllum)*. The lichen, *Lobaria pulmonaria*, an indicator species of old-growth forests in the eastern United States, has also been identified in the signature site. It occurs on old pine stands with associations of sugar maple and large-toothed aspen, and on the lower trunks of understory hardwoods.

MANY SPECIES OF MOSSES AND LICHENS ARE FOUND THROUGHOUT THE SIGNATURE SITE

## 5.6.2 Forest Fire

Forest fires have affected a large portion of the Algoma Headwaters Signature Site (Figure 12). The upper reaches of Goulais River Provincial Park (in the vicinity of Tepee Lake) burned in 1925, 1926 and 1935. Areas south and east of Patter(son) Lake were burned in 1936. Much of the east portion of the signature site, as well as the gap between the Aubinadong and the Nushatogaini River, was burned in 1948. This fire was part of the massive 'Mississagi Fire', which affected hundreds of thousands of hectares east of the signature site. Fire-origin jack pine stands have since re-vegetated most of this area.

The largest recent fire occurred in 1967, and burned almost nine per cent of the Algoma Headwaters Signature Site. This fire burned from the northern part of the Goulais River northeast to the western end of Patter(son) Lake. This fire left some areas devoid of trees, which now appear as rock barrens. Some salvage logging and replanting of pine was undertaken to reduce the impacts of this large fire. Other areas affected by recent burns are dominated by early successional tree species, such as poplar and birch. According to records kept since 1976, no significant fires have been recorded in the Ranger North Conservation Reserve. However, there have been a number of small fires less than 200 hectares in size.

Fire management planning will be a part of the implementation planning process for the signature site, during which a fire management plan will be prepared. Values within the signature site such as commercial tourism facilities, as well as timber resources located outside the signature site boundary, will continue to be protected by fire management programs.

The incorporation of some form of fire disturbance into the signature site may be considered. Fire is known to protect old-growth white pine values, by developing conditions for snags and providing adequate site conditions for white pine regeneration. As part of the preparation of a fire management plan, the intensive fire suppression approach of the past may be reviewed to examine the possibility of adapting a more measured approach to fire. That could include permitting some limited burning.

Although it is recognized that some burning may be beneficial to the signature site, the fact remains that the site is relatively small with an irregular boundary. Thus, it is acknowledged that, given the wide variability of wildfire, in terms of size, intensity and spread, this may lead to undesirable impacts on the signature site and surrounding area.

## 5.6.3 Wildlife

There are approximately 50 different species of mammals whose range extends within the Algoma Headwaters Signature Site. About 16 of the 20 furbearers commonly found in Ontario are present in the signature site.

The most common species found here are: moose *(Alces alces)*, white-tailed deer *(Odocoileus virginianus)*, black bear *(Ursus americanus)*, wolf *(Canis lupus)*, coyote *(Canis latrans)*, beaver *(Castor canadensis)*, muskrat

*(Ondatra zibethicus)*, mink *(Mustela vison)*, river otter *(Lontra canadensis)*, lynx *(Lynx canadensis)*, porcupine *(Erethizon dorsatum)*, raccoon *(Procyon lotor)* and American marten *(Martes americana)*. Smaller mammals include: eastern chipmunk *(Tamias striatus)*, grey squirrel *(Sciurus carolinensis)*, red squirrel *(Tamiascurus hudsonicus)*, northern flying squirrel *(Glaucomys sabrinus)*, deer mouse *(Peromyscus maniculatus)*, shrew *(Sorex spp.)* and vole *(Microtus spp.)*.

The cougar *(Felix concolor)* is a provincially significant mammal that may live in the vicinity of the Algoma Headwaters Signature Site. Sightings were reported in 1986 and 1993. The occurrence of cougar in Ontario has not been verified, and these reported sightings have not been confirmed. Two other provincially significant mammals, the Southern Bog Lemming *(Synaptomys cooperi)* and Smoky Shrew *(Sorex fumeus)*, have been detected in neighbouring townships, and they may also be found within the signature site.

Moose are common in the signature site area because it is a good habitat, and includes a mix of aquatic feeding areas. Hunting of moose occurs in the signature site, with some commercial outpost camps used for this purpose. There are deer within the signature site, however, there is no hunting of deer permitted. Algoma Headwaters falls within Wildlife Management Unit (WMU) #35, which does not have an open deer season.

There are 14 existing traplines and eight bear management areas contained within, or partially within, the signature site. Trapping occurs for beaver, otter, marten, mink and fox *(Vulpes vulpes)*. Based on trapper harvest data, beaver, marten, and mink are the species most commonly taken.

Twenty-five species of reptiles and amphibians have been reported within the Algoma Headwaters Signature Site. Amphibians documented within the site include frogs (seven species), American toad *(Bufo americanus)*, salamanders (4 species), red-spotted newt and snakes (seven species). Snake species include garter *(Thamnophis sirtalis)*, northern water snake *(Nerodia sipedon)* and eastern milk snake *(Lampropeltis triangulum)*. Three species of turtles are found within the signature site, including: wood turtle *(Clemmys insculpta)*, midland painted turtle *(Chrysemys picta)* and common snapping turtle *(Chelydra serpentina)*.

The wood turtle *(Clemmys insculpta)* has been found along the southern portion of Goulais River Provincial Park. It has been identified by the 'Committee On the Status of Endangered Wildlife in Canada' (COSEWIC) as a species of 'Special Concern' and by MNR's 'Committee for the Status of Species at Risk in Ontario' (COSSARO) as being 'vulnerable'. Another significant species, the four-toed salamander *(Hemidactylum scutatum)* has also been seen in the area of the signature site. Fifteen of the 25 reptile and amphibian species recorded in the vicinity of the signature site area occur at the northern limit of their range.

### 5.6.4 Birds

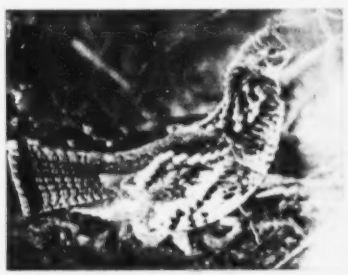
The Algoma Headwaters is frequented by a great variety of birds both for nesting and during migration. Bird species commonly seen here are common loon *(Gavia immer)*, gray jay *(Perisoreus canadensis)*, boreal chickadee *(Parus hudsonicus)*, common raven *(Corvus corax)* and ruffed grouse *(Bonasa umbellus)*. Sightings of raptors include: bald eagle *(Haliaeetus leucocephalus)*, osprey *(Pandion haliaetus)*, red-shouldered hawk *(Buteo lineatus)*, northern goshawk *(Accipiter gentilis)* and peregrine falcon *(Falco peregrinus)*. Sandhill crane *(Grus canadensis)*, merlin *(Falco columbarius)* and pileated woodpecker *(Dryocopus pileatus)* are also present. Approximately 143 breeding birds have been identified in the vicinity of the Algoma Headwaters Signature Site.

MOOSE ARE COMMON IN ALGOMA HEADWATERS

Most birds in the signature site nest widely in deciduous, coniferous and mixed forests, and forest edges. There are approximately 32 species that are wetland-dependant, nesting in mats of marsh vegetation, or in low shrubs or riparian thickets. Heron and osprey nests are commonly found in dead and decaying pine trees in certain areas of the signature site.

A few bird species that occur in the signature site are considered 'species at risk' in Ontario, including peregrine falcon and bald eagle. The provincially significant great gray owl *(Strix nebulosa)* is also found within the signature site.

Migrants from the northern tundra, such as lapland longspur *(Calcarius lapponicus)*, horned lark *(Eremophila alpestris)*, and water pipit *(Anthus spinoletta)*, are common regular migrants. Winter resident birds include red-breasted nuthatch *(Sitta canadensis)*, boreal and black-capped chickadees *(Parus atricapillus)*, blue jay *(Cyanocitta cristata)*, gray jay *(Perisoreus canadensis)* and various woodpeckers, including downy *(Picoides pubescens)* and pileated *(Dryocopus pileatus)*. Owl species include barred *(Strix varia)*, great gray *(Strix nebulosa)*, and northern saw-whet *(Aegolius acadicus)*. Woodland warblers such as the black-throated green *(Dendroica virens)* and blackburnian *(Dendroica fusca)* are common.



RUFFED GROUSE ARE COMMON THROUGHOUT THE SIGNATURE SITE

### 5.6.5 Fisheries

There are 25 species of fish which are known to occur within the Algoma Headwaters Signature Site. Seven species are game fish: northern pike, walleye, lake trout, brook trout, rainbow trout *(Oncorhynchus mykiss)*, pink salmon *(Oncorhynchus gorbuscha)* and chinook salmon *(Oncorhynchus tshawytscha)*. Lake sturgeon *(Acipenser fulvescens)*, rainbow trout, pink salmon and chinook salmon travel up the Goulais River to spawn below Whitman Dam Falls, and are found only in this small portion of the signature site.

Baitfish species that occur in the signature site are: lake herring *(Coregonus artedi)*, brook stickleback *(Culaea inconstans)*, common shiner *(Luxilus cornutus)*, blacknose shiner *(Notropis heterolepis)*, northern red belly dace *(Phoxinus eos)*, finescale dace *(Phoxinus neogaeus)*, pearl dace *(Margariscus margarita)*, creek chub *(Semotilus atromaculatus)*, Iowa darter *(Etheostoma exile)*, blacknose dace *(Rhinichthys atraulus)* and fathead minnow *(Pimephales promelas)*. (Source: MNR Lake Surveys.)

Fish communities are, for the most part, lake trout-dominated in the larger lakes, and brook trout-dominated in the smaller lakes (10 to 100 hectares). Lakes containing lake trout within the Algoma Headwaters are: Gong, Saymo, Megisan, Gord, Lance, Prairie, Nushatogaini, Goulais, Ninegee, Patter(son), Mystery and Torrance Lakes. There was an unlawful introduction of walleye into Goulais Lake, which was first discovered in 1989, and this species has since spread into Witchdoctor and Ragged Lakes.

The elevation and headwaters location of most lakes in the signature site have resulted in relatively simple fish communities. Because it is a 'headwaters' area, most lakes in the vicinity of the signature site area are small (i.e. less than 10 hectares in size),

and many of the very small lakes do not contain game fish.

According to the Sault Ste. Marie District Land Use Guidelines (1983), waterways within the signature site that contain sensitive fish habitat include: Goulais and West Aubinadong Rivers, as well as Hanes, Dyson, Quinn, Little Quinn, Hound, Fyfe, Affleck and Torrance Lakes.

The Nushatogaini River, a sub-watershed of the Mississagi River, is somewhat atypical in Algoma Headwaters because some lakes in the Nushatogaini River system contain walleye and northern pike. However, since there are at least two impassable obstructions to fish on the Nushatogaini watershed, it is likely that both these species were introduced, first showing up in substantial numbers in the fishery in 1985.

Some fish habitats are critical to the maintenance of fish populations, especially in areas where spawning beds are present. In the Algoma Headwaters, these include headwater streams of the Goulais and Mississagi Rivers, spawning areas on Goulais and Megisan Lakes, and numerous wetland areas.

Ontario fishing regulations apply in the signature site, including a special season in Gong Lake within Handleman and McIlveen Townships. This lake is designated a trophy lake trout lake, with slot sizes, lower limits, and a shortened season.

The lakes within Way-White, Schembri, Wlasy, Scriven and Bracci Townships are designated high-quality fishing areas (Ontario Fishery Regulations, 1989 as amended). Therefore, live bait fish is not permitted in these lakes, lake trout catch and possession limits are reduced, and special sanctuary status (shortened season) applies.

There is a small section of the East Goulais River within Goulais River Provincial Park which is designated as fly fishing only. Below Whitman Dam Falls on the Goulais River, walleye and sauger have a shortened open season and a reduced catch limit.

## 5.7 Cultural Resources

The Algoma Headwaters Signature Site area was traditionally used by First Nations people, and is rich in pre-European and post-European contact cultural history. This area was important for aboriginal people, and was extensively utilized for multi-family summer villages. This traditional use by First Nations peoples included the Mississagi, Thessalon, Garden River, Batchawana, Michipicoten, and Chapleau Ojibway. Historically, several small groups, such as the Wenebegon Lake band, also used the area, and family groups based in Franz (situated at Mile 195 on the Algoma Central Railway), Wakami Lake and Chapleau areas (Dalla Bona, 2002).

Based on studies, it is likely that there are numerous aboriginal heritage sites within the signature site and on surrounding Crown lands, although few have been verified officially. There are no known fur trade posts that existed within the boundaries of the Algoma Headwaters Signature Site, however, it appears that the Algoma Headwaters area may have been an important setting in the region for native land use during the Historic Period (since 1600 A.D.) Aboriginal trappers were very active in the area from the beginning of the fur trade in the late 1600s, until about 1915, when fur trading activity began to decline.

Logging and remote tourism activities became the activities of commerce in the area around the mid-1900s. Many of the original tourist camps, which had their origins in the 1940s, are still operating today, while remnants of the lumber camps have now all but disappeared. However, the possibility exists throughout the signature site area for encountering remnants of early logging camps and associated materials (e.g. old foundations, dams, artifacts). The Goulais River acted as a major transportation corridor for transporting logs from the Algoma hinterland to the mills at Searchmont, Heyden, and Sault Ste. Marie. An old logging camp and foundry is thought to have been situated in the vicinity of the Mile 23 Bridge crossing of the Goulais River.

Dams and chutes were constructed at various locations on rivers and lakes to better control water levels and assist in floating logs downriver. There is an old dam at the south end of Saymo Lake, and the remains of an old dam can be found at the outflow of Dyson Lake. An extensive dam and log chute was built at Whitman Dam Falls (hence the name), however, little remains of this today.

A cultural heritage assessment has been carried out for the Algoma Headwaters Signature Site (Dalla Bona, Woodland Heritage Services, 2002). This study concluded that there is sufficient evidence to suggest that a high density and large diversity of cultural heritage resources may exist within the boundaries of the signature site.

During the Megisan EA process in the early 1990s, cultural heritage areas were assessed, and two documents were prepared: "Potential Cultural Heritage Areas" and "Ethnohistory and Aboriginal Land Use" (1991). Two specific traditional use sites were identified on Megisan Lake, and it was verified that the area was once an important centre for multi-family summer villages. In addition, two registered archaeological sites were identified on Wabos Lake, which is situated just northeast of the signature site.

The signature site area is characterized as the headwaters of several interior canoe routes which link to both Lake Huron and Lake Superior, over the height of land. Both the Goulais River and, indirectly, the Batchawana River, link the Algoma Headwaters Region to Lake Superior. The West Aubinadong is not only a tributary of the Mississagi River, but also connects through Ranger Lake with the upper portions of the Garden, Echo and Thessalon rivers. To the west and north, the Upper Goulais, Batchawana and Montreal rivers are all easily accessible from the Algoma Headwaters area. The headwaters of the Montreal River, which flows into the south end of Agawa Bay on Lake Superior, are in close proximity to the West Aubinadong River. Therefore, this area would have had considerable significance for the aboriginal people who used these waterways as their primary transportation routes.

The Mississagi First Nation, whose main settlements lie near Blind River, had traditional lands along the Mississagi River on both sides of what is now Highway 129. According to interviews with elders, members of the Babiwash family trapped on portions of the Aubinadong River, while other families trapped at Ranger and Witchdoctor Lakes. Fred Pine related that Sam Babiwash, a locally famed herbalist, built his trapping headquarters at Witchdoctor Lake (originally called 'Mushkiki Sagagen' meaning 'source of herbs' or 'plant medicine' lake). During the 1930s, four families lived at Witchdoctor Lake. The native women stayed at the lake during the winter trapping season, while the men alternated between the base camps and travelling the traplines. The trapping ground was large enough to require overnight camps.

The Garden River First Nation used the upper, middle and lower Garden River valley, below Ranger and Garden Lakes. When forest fire or other similar disturbances had an impact on hunting, trapping and fishing, the Garden River and Mississagi First Nations sometimes made agreements to exchange land occupancy in each other's territories. For example, Saymo Lake at the very south end of the signature site, was used for this purpose. The greater Algoma Headwaters region was also once part of the hunting grounds of the Michipicoten Band.

The present-day Batchawana First Nation includes the descendants of native groups who used the Agawa, Batchawana and Goulais River valleys, as well as adjacent portions of eastern Lake Superior. The original territory of these groups extended far up each of these rivers. By the 1930s, many of these groups had been decimated by epidemics, and most had relocated to Batchawana Bay.

Megisan Lake is considered to have high potential for cultural values, since it has served as a hub for traditional aboriginal transportation routes. It has also been well documented as an important

spiritual location for the First Nations, as well as a plant collection and trapping location. According to several elders, there was a central settlement located on Megisan Lake which linked winter and summer travel routes to the other aboriginal communities from Chapleau and Franz areas.

William Sherman, a non-native trapper, operated his trapping business out of Megisan Lake in the 1930s, and in 1974 he was interviewed about the time he lived on the lake. He said he built a camp on a large island in Megisan Lake, where the natives also camped. On the north shore, opposite the island, was an Indian birch-bark canoe building site. At that time, he observed depressions in the ground in the shape of canoes, and wooden pegs and canoe ribs were laid out around these forms. He also found balls of split spruce roots on a portage to a neighbouring lake. Sherman recalled stretchers for skins which had been processed on the site (these lay covered under a few inches of moss and leaves). He also found a Remington double-barrelled gun, which was wrapped in canvas. Sherman identified several important food resources in the area of Megisan Lake, including a large cranberry marsh frequented by native families.

Fred Pine, who travelled extensively in the area east of Lake Superior, described the aboriginal travel routes of the area. People from the Garden River settlement on the St. Mary's River could travel up the Garden River to Ranger Lake and Saymo Lake. Portages lead to the Goulais Lake or to the Aubinadong River. Mr. Pine also recalled that native families could reach the upper part of the Montreal River to travel to Lake Superior or, alternatively, they could descend the Goulais River. There were canoe and winter travel routes which followed the Mississagi River valley and the Aubinadong River, as well as the arduous portages leading from the Mississagi River westward to the country near and beyond Ranger Lake.

Mr. Pine also documented an original canoe route used by native people from the greater Sault Ste. Marie area to reach Chapleau or the Moose River drainage system. This canoe route to Chapleau went up the Aubinadong River (referred to as the Sand River by Aboriginals) by the east branch of the Goulais River. Chubb Lake and Hanes Lakes could be easily reached by this route, and would have been used as fishing and hunting areas. It is likely that this canoe route was used by the native families who summered in the Chapleau and Franz areas, to reach their wintering grounds at Megisan Lake.

The Goulais River is a major travel corridor from Lake Superior to the interior of Algoma. In pre-contact times, the river provided reliable travel by canoe, interrupted only by falls and rapids. At the larger rapids and falls, camps could be expected at either or both ends of the portage trails, and for particularly long portages, camps would sometimes be set up along the trail itself. Unfortunately, there are no known archaeological sites on the Goulais River and the changing nature of the river makes it difficult to locate anything but the most recent sites along its banks. (It is possible that earlier occupations occurred on higher terraces, but it is also possible that these have eroded and, as a result, the earlier sites may no longer exist.)

Copper deposits are found in the vicinity of the Goulais River. The use of copper tools is associated with occupations as far back as the Archaic period (5000 to 500 BC). Ancient copper mines might exist at or near these copper deposits. People mined the copper, then brought it back to their campsites for further processing.

A trail runs to the south shore of Tepee Lake, and this trail system continues to the west and northwest to Hanes Creek, Hanes Lake, and further to the west to Red Pine Lake. On Hanes Lake, there are no known cultural sites, although historic campsites may exist here, and perhaps even pictographs, due to the steep relief (Dalla Bona, 2002). There are trails in Way-White Township from Wisy Townships that are a continuation of trails connecting with the Chippewa River, providing a water route to Lake Superior to the west either directly or via the Batchawana River.

Hematite was used by native people as an important mineral, and four hematite deposits have been identified in Gaudry Township within the signature site. Its rich red colour was used as a pigment for a wide variety of purposes, from painting pictographs to treating the dead during burial.

There is a large amount of recorded cultural heritage activity on both Prairie Grass and Nushatogami Lakes. Trails come into these lakes from the east and west and a number of areas of high archaeological potential are also noted. There are no recorded archaeological sites on the east Aubinadong River, but significant potential does exist here (Dalla Bona, 2002).

If more intensive archaeological studies were conducted within the Algoma Headwaters Signature Site, cultural heritage sites would undoubtedly be discovered ranging as far back as 7,000 to 8,000 years ago. These sites could include campsites, ancient mine workings, pictograph sites, canoe building sites, additional trails, portages and, possibly, features such as culturally modified trees.

## 5.8 RECREATIONAL RESOURCES

The Algoma Headwaters Signature Site features scenic backcountry landscapes of mixed forests with numerous lakes and waterways. It is considered to have high recreational value, including a wide variety of backcountry recreational opportunities. Recreational activities the area offers include: fishing, hunting, camping, canoeing, kayaking, motor boating, berry picking, hiking, mountain biking, snowshoeing, cross-country skiing, snowmobiling, ATVing, nature appreciation, wildlife viewing and sightseeing.

Limited road access increases the area's value for recreationists and others who are interested in a setting which offers a backcountry or 'near wilderness' experience. The various recreational waterways in the signature site present opportunities for canoeing, boating and remote fly-in lodge and outpost tourism. The signature site is a popular moose hunting area, and the area's coldwater fishery supports significant sport fishing values.

Sport fishing, especially for trout, is most popular in spring when the waters are cold. The area is also used for ice fishing in winter. Hunting activities generally extend from mid-September to the end of October. The commercial tourist operators within the signature site offer fly-in trips for visitors who want to experience a variety of recreational opportunities.

Duration of recreational activities typically ranges from part of a day to four or five days, with relatively few long-term visitors. Some recreationists camp for extended periods at landings and campsites, accessible by road. However, the Public Lands Act currently limits Crown land camping to 21 days.

A recreational use survey, conducted by MNR during the Megisan Lake EA, identified the following characteristics as the main contributors to positive recreational experiences in this area's backcountry setting:

- abundance of fish and other game
- type of fish available (lake trout)
- access to rivers and lakes
- remoteness, solitude
- natural beauty of the ecosystem (e.g. flora and fauna, intrinsic value of backcountry)

Several remote commercial tourist outfitters are currently operating in the Algoma Headwaters Signature Site, including Ontario Wilderness Vacations, Megisan Lake Wilderness Lodge and Northwoods Air. Air service operations are based mainly in the communities of Ranger Lake, Hawk Junction and Chapleau. Commercial tourist camps are located on Megisan, Goulais, Gord, Prairie Grass, Affleck and Nushatogami Lakes, as well as on the Nushatogami River. These remote tourism locations vary in size and land tenure (patented vs. land use permit). A private facility on Patter(son) Lake previously operated as a commercial lodge.

Limited road access to the area increases the potential for further eco-tourism and remote tourism activities. Several lakes in the signature site have been identified in the Sault Ste. Marie District Land Use Guidelines as "commercial tourism lakes". These include: Megisan, Gord, Goulais, Affleck, Dyson, Patter(son), Nukumis, Ragged, Gong and Prairie Grass.

Planning for the signature site will include an

examination of the tourism capabilities and carrying capacity of the area, to determine if there are opportunities for new commercial tourism. Until that review is completed, and pending the direction given in the signature site strategy, no development of new facilities or services will be permitted.

The Algoma Headwaters has gained a reputation for high-quality wilderness canoeing in a backcountry setting that is both remote and accessible. Almost 150 kilometres of interconnecting canoe routes link many of the site's lakes and rivers. Many of these canoe routes are suitable for day trips or short overnight trips. Some of the signature site waterways also link to other canoe routes, most significantly to the Batchawana and Mississagi rivers, and canoeists travelling these rivers may begin their trip in the signature site. Canoeing opportunities are generally categorized as 'flat water'. However, during spring run-off conditions, many rapids on the Goulais River may be classified as Class I through Class IV whitewater.

There are two major canoe routes in the Algoma Headwaters Signature Site: the Goulais River and the Aubinadong – Nushatogaini Rivers (also known as the Ranger Lake Loop canoe route). The route descriptions of these waterways are included in several canoeing guides and paddling Web sites.

The GOULAIS RIVER CANOE ROUTE is 117 kilometres, beginning at Witchdoctor Lake, meandering south to the village of Searchmont and eventually draining into Lake Superior. (Note: Only the 67 kilometre portion north of Searchmont is in Goulais River Provincial Park.) The Goulais River has gained wide acceptance as a remote but accessible canoe route, most commonly reached from the Whitman Dam Road.

From Witchdoctor Lake, the Goulais River Canoe Route heads in a southwesterly direction across the south end of Algoma Headwaters Provincial Park. Within Goulais River Provincial Park, where substantial gradient occurs, there is a variety of swifts, rapids and waterfalls. The river's water levels are strongly influenced by precipitation and reach their maximum during spring run-off. Once the canoeist has reached the southern boundary of Goulais River Provincial Park, the river becomes slow moving and meandering through the remaining length of approximately 50 kilometres on its way to Lake Superior.

The AUBINADONG – NUSHATOGAINI CANOE ROUTE is the second significant canoe route in the Algoma Headwaters Signature Site, following sections of the Aubinadong and Nushatogaini Rivers. The starting point for this route is either at Gong Lake or from Ranger Lake (through Saymo, Friendly, and Mystery Lakes to Gong Lake). The route runs north up Gong Creek to the junction of the Aubinadong and Nushatogaini Rivers, then upstream on the Aubinadong to Torrance Lake. From here, the route goes through Megisan and Prairie Grass Lakes, down Firetrail Creek to where the route joins the Nushatogaini River. It then flows south (downstream) to the junction of Gong Creek, and then upstream back into Gong Lake (continuing south to Ranger Lake, outside of the provincial park.) Both the Aubinadong and the Nushatogaini Rivers are slow moving, and their water levels are greatly influenced by precipitation. This canoe route is commonly referred to as the "Ranger Lake Loop".

Some examples of shorter canoe routes in the area are:

- Megisan Lake to Gord, Lance and Nokomis Lakes
- Megisan Lake to Affleck Lake
- Gong Lake to Anvil, Mystery and Friendly Lakes
- Firetrail Lake to Nushatogaini Lake
- Quinn Lake to Dyson Lake
- Quinn Lake to Little Quinn Lake
- Hanes Lake to Goulais River
- Graham Lake to Goulais River
- Goulais Lake to surrounding lakes (e.g. Lakes 35 and 36)

The outpost operators on various lakes, such as Goulais, Gord, Megisan and Prairie Grass Lakes, have constructed trails and portages that provide access to surrounding waterways.

The Algoma Headwaters Signature Site has a system of existing snowmobile and ATV routes along trails and forest access roads throughout the area. A map produced by the Sault Ste. Marie Trail Blazers and Algoma Forest Coalition indicates a snowmobile trail that runs between Sault Ste. Marie and Wawa through the Algoma Headwaters Signature Site. The use of snowmobiles and ATV's will be permitted to continue along authorized trails (OLL - LUS, 1999).

There are over 200 kilometres of mountain bike trails in the Searchmont area, many of which follow old logging roads. Some small sections of trails are located in the Goulais River Waterway Park.

The Algoma Headwaters Signature Site offers a variety of recreational experiences for a variety of users, such as flatwater and whitewater canoeing, remote backcountry and car camping, and fly-in outpost camps. The signature site will continue to offer year-round recreational enjoyment in a scenic backcountry setting.

When the signature site planning process is complete, a marketing, recreation and tourism strategy will be prepared for the Algoma Headwaters Signature Site. The site will be marketed as a unique and distinctive natural area with significant earth and life science values, and recreational features. This strategy will be prepared in conjunction with area residents, local organizations and tourist operators, in order to enhance recreational and tourism opportunities available in this important signature site.

For now, client services will continue to focus primarily on requests for information, related to such items as canoe routes, access locations, natural heritage appreciation, wildlife viewing opportunities and signature site boundaries.

## 6.0 Marketing/Client Services

Detailed literature may be developed describing the signature site's features and resources, and providing additional general information about access and safety, etc. A signature site map may be produced highlighting various recreational opportunities, access locations, canoe routes, hiking trails, camping areas, location of old growth pine sites, nature appreciation and interpretation, as well as areas where no mechanized travel is permitted. Details on these opportunities will follow directives from the approved signature site strategy.

The signature site will be promoted by distributing materials telling the public about features and activities in the site. The profile of the area will be heightened by publicity from the signature site planning process, including newspaper advertisements, mail-outs and the *Environmental Bill of Rights* (EBR) postings.

## 7.0 Planning Issues

The planning process for the signature site will address the issues described below.

### 7.1 Access

There is a need to integrate the variety of access routes in the site, including:

- Canoe routes (designated and additional)
- Existing road access through the signature site
- Mechanized off-road travel
- ATV and snowmobile access
- Private and commercial aircraft access

### 7.2 Adjacent Land Uses and Activities

The existing Ranger North access road, and other identified existing authorized roads necessary for forest industry use, may be maintained for use by the forest industry and recreational users. No new aggregate pits will be permitted within the Algoma Headwaters Signature Site. Associated issues include:

- Management of signature site related values on adjacent lands and waters
- Supportive landscape management within the context of the greater surrounding ecosystems
- Preparation and implementation of a marketing, tourism and recreation plan for the Algoma Headwaters, and its integration with management planning

### 7.3 Development/ Commercial Tourism

It must be determined how much, if any, new development should be permitted within the signature site. More specifically, there must be a decision about what constitutes an appropriate level of commercial tourism.

### 7.4 Social and Economic Opportunities, Benefits and Impacts

Opportunities may exist for potential partnerships and business agreements with area First Nations and other communities, stakeholders, and businesses.

A socio economic study will be prepared to determine present use, impact, and future opportunities within Algoma Headwaters Signature Site.

## 7.5 Protection

The signature site strategy will address management of natural and cultural values through:

- Identification, assessment and management of heritage resources
- Research and monitoring priorities
- Growing angling pressure on the signature site's fisheries
- Appropriate zoning designations within the signature site
- Involvement with the First Nations communities and other area communities to ensure the protection of natural and cultural heritage values are identified
- 'Species at Risk' identification, monitoring and appropriate management measures

## 7.6 Rehabilitation of Sites Affected by Past Land Uses

The signature site strategy will facilitate:

- Ecological restoration requirements of signature site fisheries and aquatic habitats
- Rehabilitation of unnecessary resource extraction roads
- Restoration and management of altered forest stands, and plantations
- Further research and monitoring

## 7.7 Visitor Management and Customer Service

An operations plan is needed to provide information to visitors to the signature site, including:

- Signage
- Education, information and compliance
- Needs assessment: individual campers, commercial outfitters, youth camps
- Visitor distribution
- Visitor entry, registration and fee collection
- Standard for backcountry operations
- Establishment and compliance of best practices for low-impact backcountry travel
- Visitor safety
- Integration with recreational use and travel patterns on adjacent Crown lands

## 7.8 Forest Fire Management Plan

A forest fire management plan will be prepared for the Algoma Headwaters Signature Site.

- Wildfire is a natural process, and can be critical to natural succession and rejuvenation of the forest
- The appropriate level of forest fire protection must be determined.

## 7.9 Partnerships

It must be determined what activities could be undertaken by partners with the MNR and Ontario Parks, and what partnerships would be appropriate for the signature site.

## 7.10 Implementation

The appropriate level of operations and management for the site must be determined. For example, should a work centre be located on the site? Or should more camping areas be considered?

## 7.11 Research and Monitoring

Research and monitoring priorities will be set, as required, to identify, assess and appropriately manage the natural and cultural resources of the Algoma Headwaters Signature Site.

Sunset in Algoma Headwaters Provincial Park

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FIGURE 1: ACCESS AND RECREATIONAL USE PLANS

Please see separate PDF file for map

Figure 4: Land Use

Please see separate PDF file for map



Figure 5: Bedrock Geology

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FIGURE 6: SURFICIAL GEOLOGY

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FIGURE 7: MEGASIN EA AREA FOR THE ALLEGHENY HEADWATERS SIGNATURE SITE

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FIGURE 8: WATERSHEDS AND DRAINAGE

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FIGURE 9: VEGETATION ECOREGIONS

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Figure 10: Vegetation Communities

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Figure 11: Old Growth Pine

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FIGURE 12: FORAGE FISH HISTORY

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FIGURE 13: FISHERIES (SPECIES BY TABLE)

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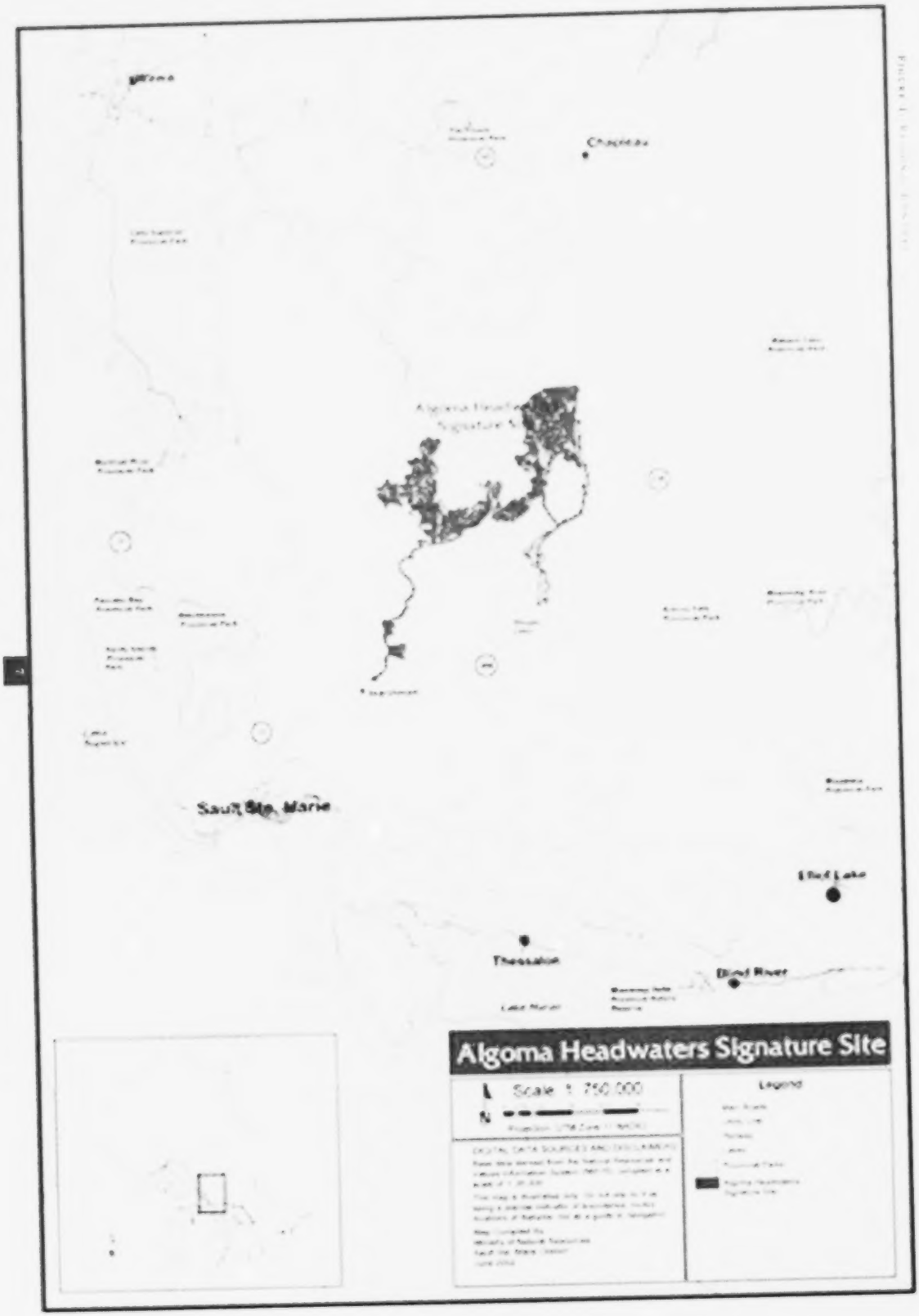
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Sault Ste. Marie
Thessalon
Blind River
Elliot Lake

Algoma Headwaters
Signature Site
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Figure 2a: Algoma Headwaters Provincial Park

Figure 2b: Goulais River Provincial Park

Aubinadong-Nushatogaini Rivers Provincial Park
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Ranger North Conservation Reserve
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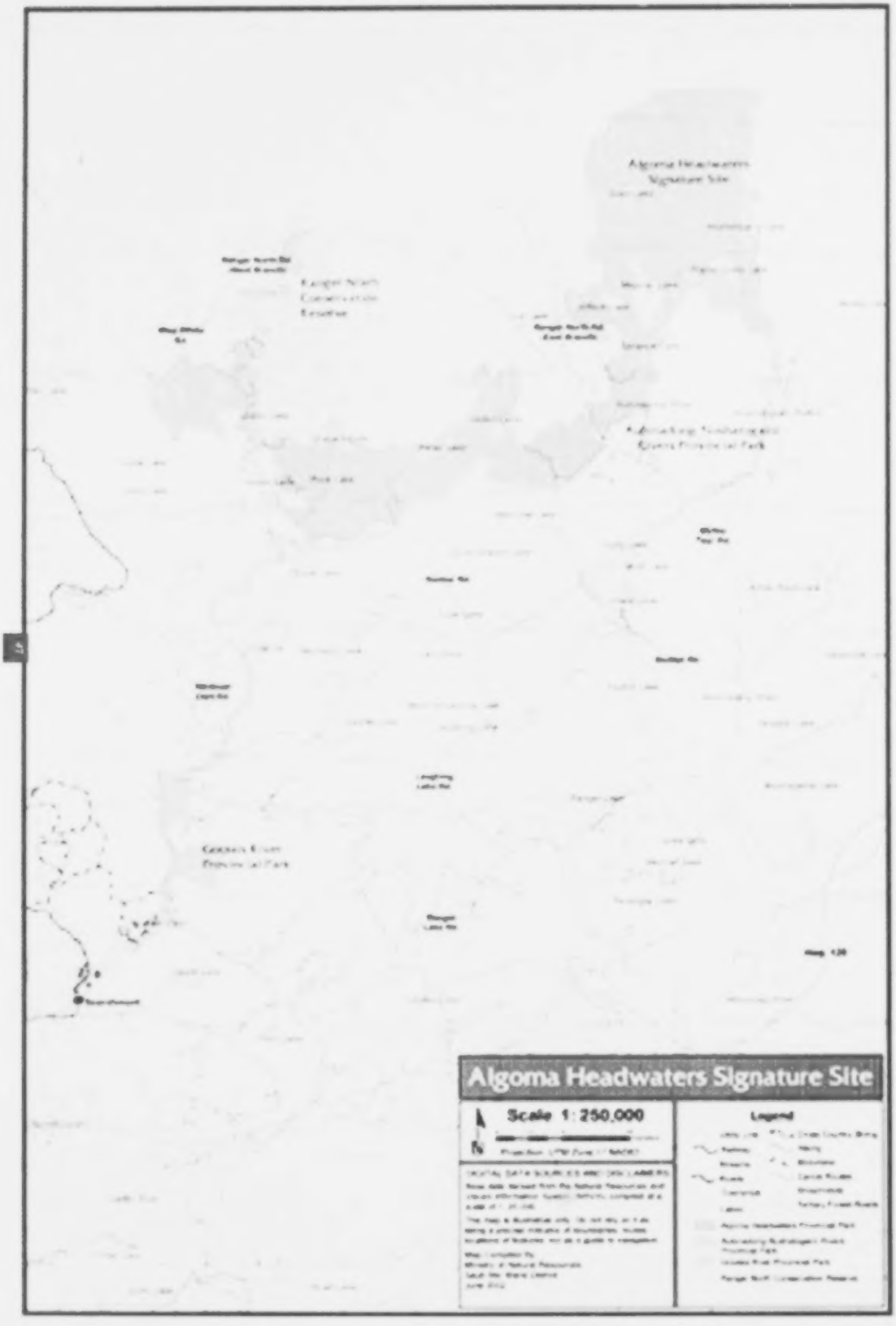
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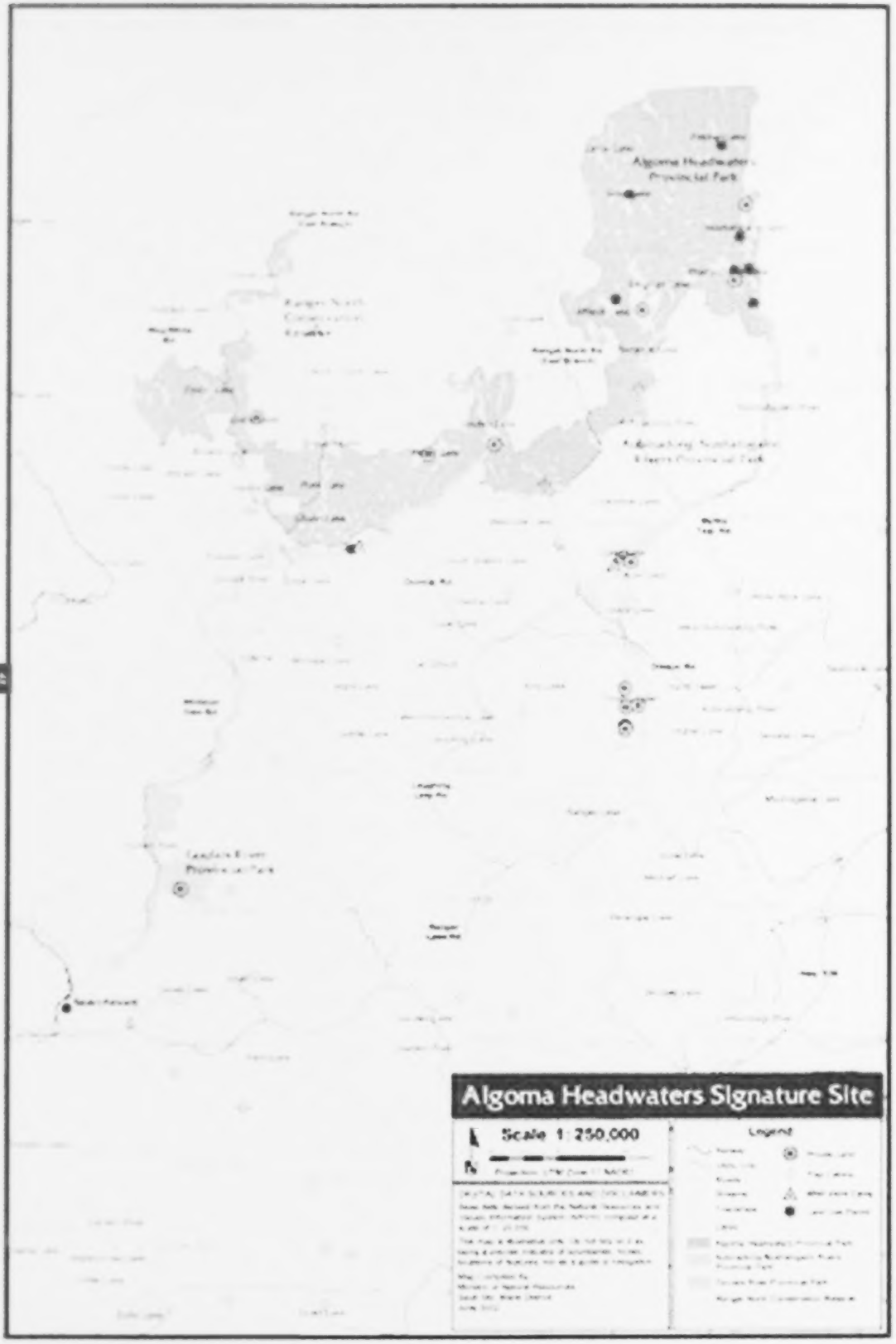
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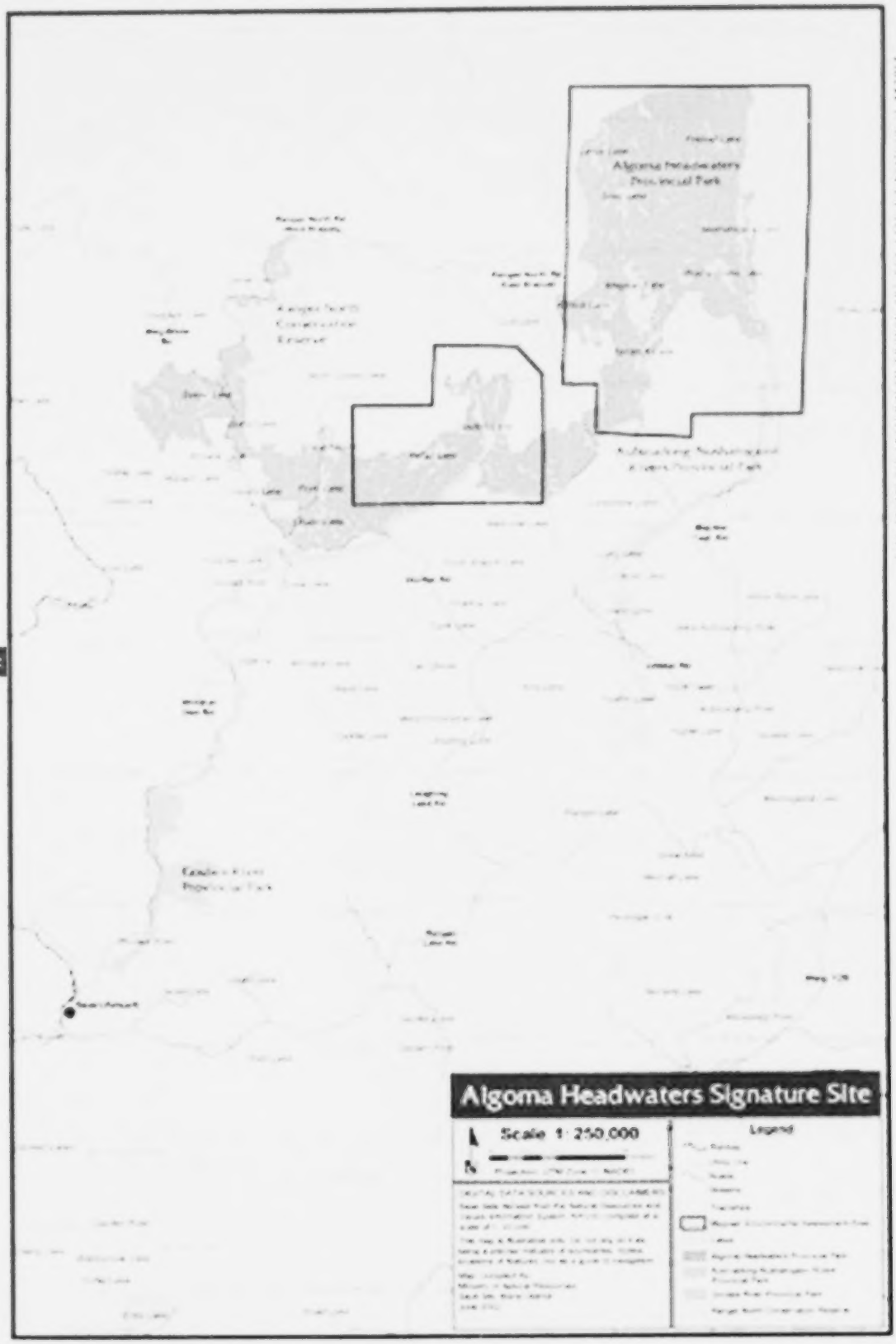
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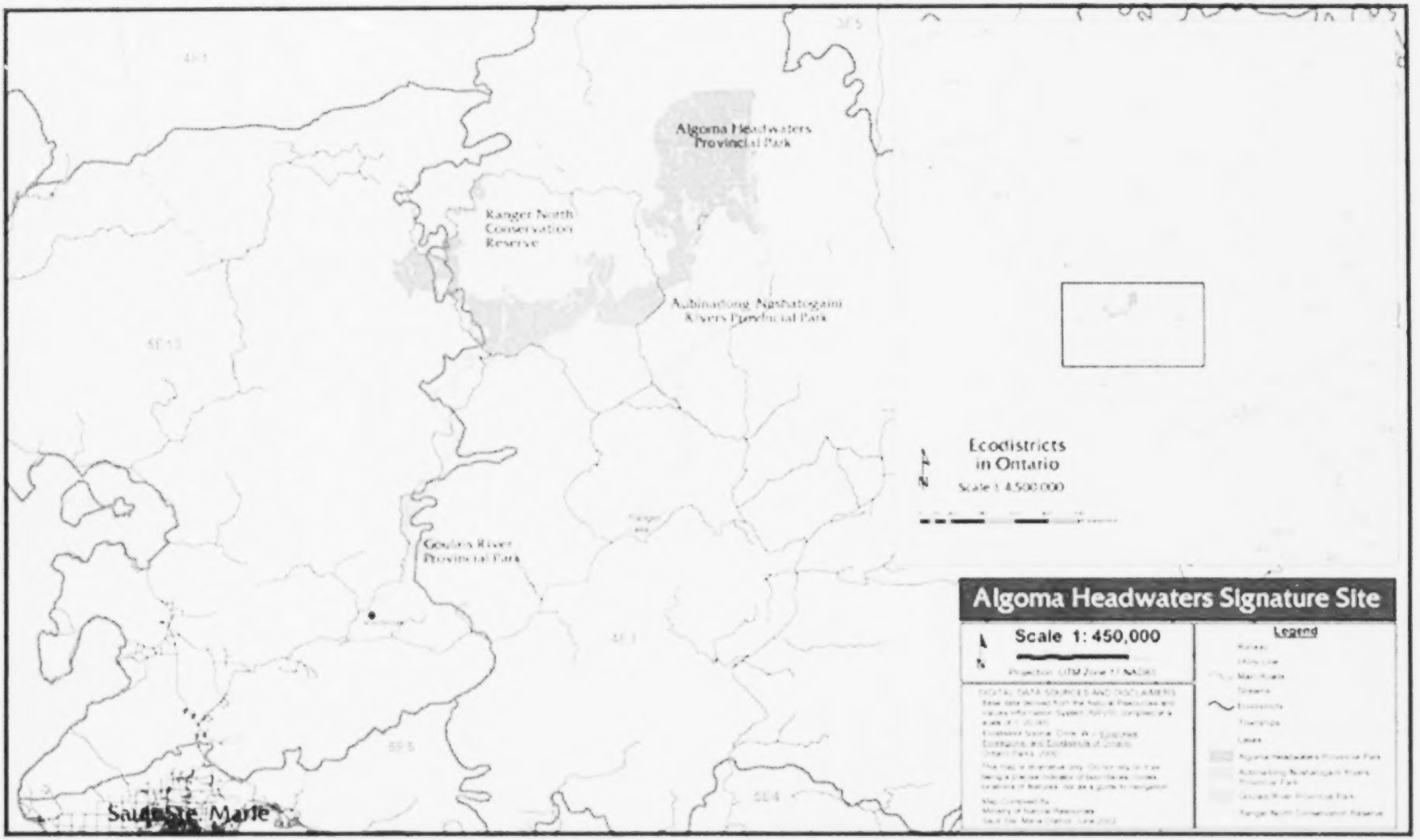
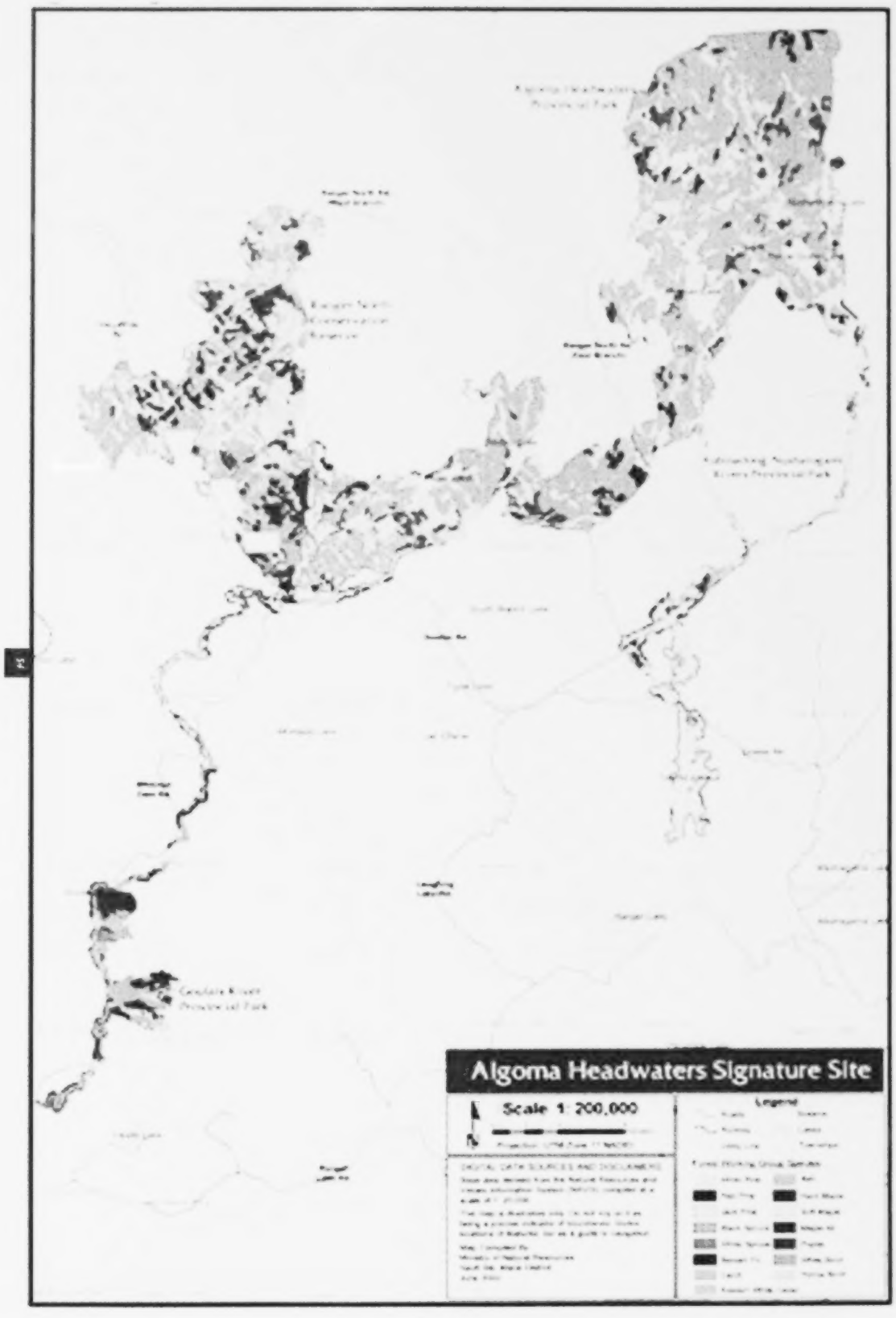
Figure 9. Vegetation Ecodistricts

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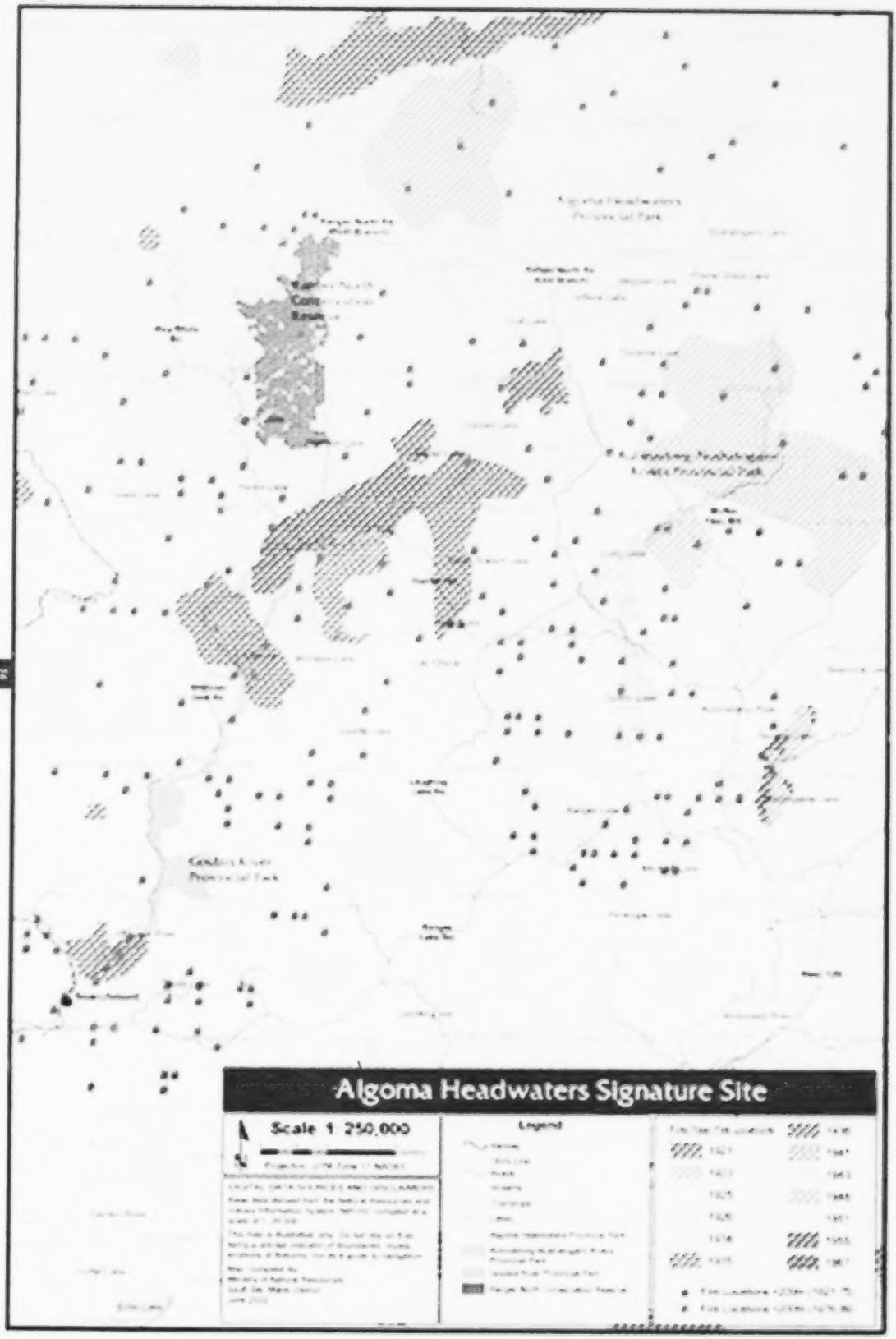
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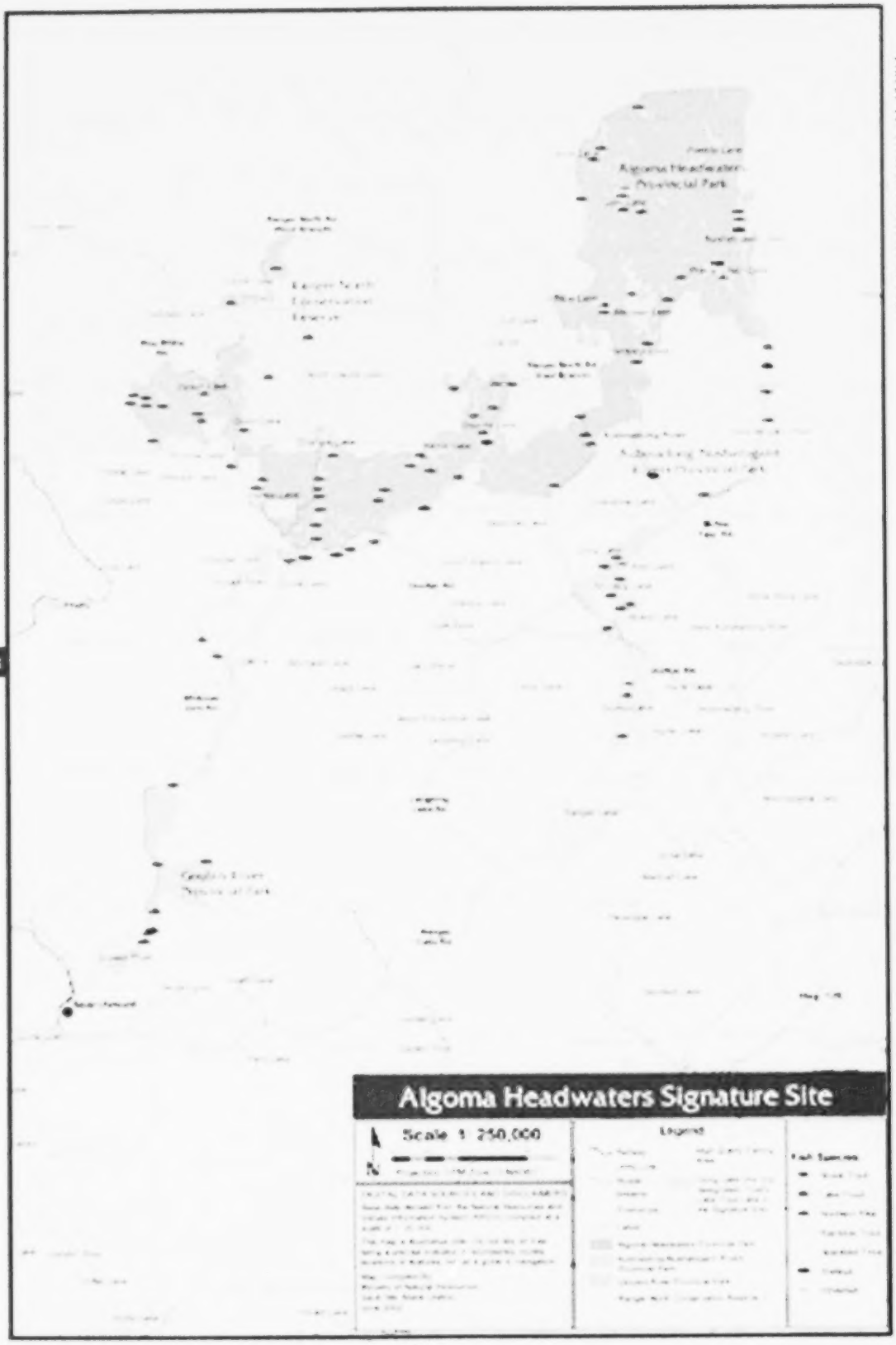
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